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# A Brief History of the Rural Electric and Telephone Programs

United States.
Department
of Agriculture

Rural
Electrification
Administration

Washington
D.C.
20250

April 19, 1982



Honorable Jamie L. Whitten
Chairman, Committee on Appropriations
House of Representatives
Washington, D.C. 20515

Dear Mr. Chairman:

In connection with the hearings on the 1983 appropriation bill, you requested REA to prepare a history of the accomplishments of the Rural Electrification Administration similar to the one the Committee requires the Farmers Home Administration to prepare each year.

Pursuant to your request, we are pleased to submit a "Brief History of the Rural Electrification and Telephone Programs" for the use of the Committee.

Sincerely,

Harold V. Hunter

HAROLD V. HUNTER
Administrator

# A BPIEF HISTORY OF THE RURAL ELECTRIFICATION AND TELEPHONE PROGRAMS

CONTENTS

# HISTORY

The Rural Electrification Administration (REA) is a credit agency of the U.S. Department of Agriculture which assists rural electric and telephone organizations in obtaining the financing required to provide electric and telephone service in rural areas. These essential services help improve the quality of life for people who live, work, or do business throughout rural America. Financial assistance may include (a) loans from REA, (b) guarantees of loans made by others, and (c) REA approval of security arrangements which permit the borrower to obtain financing from other lenders without a guarantee.

REA was first established by Executive Order 7037 on May 11, 1935, as part of a general program of unemployment relief. It soon became clear, however, that the task of extending central station electric service to rural areas required very specialized skills (engineering, management, etc.) that would be difficult to attract if REA operated under the constraints of the unemployment relief authorization. REA was given its own statutory authorization by the Rural Electrification Act of May 20, 1936. It became part of the U.S. Department of Agriculture on July 1, 1939.

Federal support was needed to electrify rural America because most of the established utilities served high density areas and did not extend lines to farmers and other rural residents because such investments were not considered to be feasible.

When Congress establtshed REA, its purpose was to assure that funds would be available for rural electrification. Loans were made at interest rates that fluctuated with the cost of money to the Government. It was not until 1944 that Congress established a fixed interest rate of two percent, which, at that time, was the approximate cost of money to the Government. As time went by and interest rates rose, the subsidy associated with REA loans grew. The difficult tasks involved with the initial organizing and constructing of rural electric systems was made possible by the availability of capital from REA, innovative construction techniques and the establishment of cooperatives, not by subsidized interest rates.

The purpose of REA was expanded in 1949 when REA was authorized to loan funds for telephone service in rural areas. As in the case of electricity, it became clear that rural residents would not have access to adequate and dependable telephone service unless Federal support was provided. Both the rural telephone and rural electric programs of REA have been very successful in achieving their goals.

During the late 1960s and early 1970s, rural electric and telephone leaders came to realize that (a) their capital needs were growing at a very rapid rate and would very likely continue to grow, (b) it was no longer reasonable to expect the Government to meet all of their growing capital needs and (c) they had developed sufficient financial strength to obtain a portion of their capital needs from private sources. For these reasons, supplemental sources of financing were developed for both rural electric and telephone utilities.

The National Rural Utilities Cooperative Finance Corporation (CFC) was formed in 1969 by the rural electric cooperatives. It obtains funds from the private credit markets for its loans to electric systems. As of December 31, 1981, CFC had provided more than $1.9 billion in long-term loans to its membership, which includes 862 systems. In addition to CFC, rural electric systems obtain loan funds from the Banks for Cooperatives and other private sources.

The Rural Telephone Bank (RTB) was established in 1971 by Public Law 92-12 which amended the Rural Electrification Act. It is the primary supplemental source of financing for the growing capital needs of rural telephone systems.

The Rural Telephone Bank is managed by a 13-member board of directors. The Administrator of REA serves as Governor of the Bank until conversion to private ownership, control, and operation. This will take place when 51 percent of the Class A stock issued to the United States and outstanding at any time after September 30, 1995, has been fully redeemed and retired. The Bank board holds at least four regularly scheduled meetings a year. Activities of the Bank are carried out by REA employees and the Office of the General Counsel of the U.S. Department of Agriculture.

In 1973, a major amendment to the Rural Electrification Act established the "Rural Electrification and Telephone Revolving Fund" (RETRF) for the purpose of making loans to REA electric and telephone borrowers. The amended Act established that loans to be made from the RETRF would be at a standard rate of five percent instead of the two percent rate at which REA loans had previously been made. The two percent rate was retained as a special rate for borrowers that met criteria specified in the 4ct. It was also available, at the Administrator's discretion, for hardship cases.

In addition to establishing the RETRF, and increasing the interest rate on REA loans, the 1973 amendment authorized REA to guarantee loans made by other lenders. Today these loan guarantees account for most of the loan funds obtained by electrification borrowers.

The 1973 Amendment to the Act states it is the policy of the Congress that "rural electric and telephone systems should be encouraged and assisted to develop their resources and ability to achieve the financial strength needed to enable them to satisfy their credit needs from their own financial organizations and other sources."

In 1981, Congress further amended the RE Act by eliminating the special two percent interest rate on loans to rural electric and telephone systems. Such utilities now receive loans at five percent from the RETRF, as do other borrowers. Exceptions to the five percent rate may still be made at the discretion of the REA Administrator where there is a finding of hardship.

## CHRONOLOGY OF LEGISLATIVE CHANGES

## RURAL ELECTRIFICATION ACT OF 1936
## 7 U.S.C. 901-950b

1935. The Rural Electrification Administration was created by Executive Order 7037 of May 11 under authority of the Emergency Relief Appropriation Act of 1935, approved April 8, 1935, (49 Stat. 115).

1936. Statutory provision for the agency was made in the Rural Electrification Act (RE Act) of 1936, approved May 20 (49 Stat. 1363; 7 U.S. Code, Chapter 31).

1938. Title IV of the Work Relief and Public Works Appropriation Act of 1938, approved June 21 ("RE Act of 1938," 52 Stat. 818) authorized further borrowing from the Reconstruction Finance Corporation and added a requirement that borrowers from REA agree to use materials and supplies produced in the United States.

1939. REA became a part of the Department of Agriculture under Reorganization Plan II, effective July 1.

1944. Title V of the Department of Agriculture Organic Act of 1944, approved September 21 (58 Stat. 739) liberalized the terms of REA loans and removed the time limitation from its lending program.

1944. On December 23, the Rural Electrification Act was further amended to authorize REA to refinance certain rural electrification obligations owed to the Tennessee Valley Authority (58 Stat. 925).

1947. The Department of Agriculture Appropriation Act, 1948, approved July 30, (61 Stat. 546) further amended the Rural Electrification Act by transferring from the Reconstruction Finance Corporation to the Secretary of the Treasury the authority to make loans to REA.

1948. On June 29, the Rural Electrification Act was again amended to authorize REA to refinance certain additional rural electrification obligations owed to the Tennessee Valley Authority (62 Stat. 1070).

1949. On October 28, the Rural Electrification Act was further amended to authorize REA to make loans for the purpose of furnishing and improving rural telephone service (63 Stat. 948).

1955. On June 15, the Rural Electrification Act was amended by revising the formula governing the allotment of electrification loan funds (69 Stat. 131).

1962. On October 23, the Rural Electrification Act was amended by broadening the definition of telephone service (76 Stat. 1140).

1971. On May 7, the Rural Electrification Act was amended to establish a Rural Telephone Account and the Rural Telephone Bank (85 Stat. 29; 7 U.S.C. 931-9506).

1972, On June 30, the Rural Electrification Act was amended to authorize the Secretary of the Treasury to purchase Telephone Bank debentures (86 Stat. 390; 7 U.S.C. 921b.)

1973. On May 11, the Rural Electrification Act was amended to establish a revolving fund for insured and guaranteed loans under Title III (87 Stat. 65; 7 U.S.C. 931-940.)

1975. On November 4, the Rural Electrification Act was amended to expressly authorize the assignment of REA guarantees to the extent provided in contract of guarantee, to clarify the incontestability of the Government guarantee, and to specifically require justification of budget estimates. (89 Stat. 677; 7 U.S.C. 936; 938; and 906.)

1976. On April 21, the "Fiscal Year Adjustment Act," amended the Rural Electrification Act to reflect necessary changes in laws because of the October-September fiscal year. (90 Stat. 375; 31 U.S.C. 701 note.)

1976. On October 20, the Rural Electrification Act was amended to correct unintended inequities in the interest rate criteria and to transfer the unobligated balance of the 1973 loan authorizations to the Rural Electrification and Telephone Revolving Fund. (90 Stat. 2701; 7 U.S.C. 931; 935.)

1977. On August 4, the "Department of Energy Organization Act," added section 16 to title 1, to require the Administrator when making or guaranteeing generation or transmission loans to consider general criteria published by the Secretary of Energy. (91 Stat. 608; 7 U.S.C. 916.)

1981. On August 13, the "Omnibus Budget Reconciliation Act of 1981," amended the Rural Electrification Act: (1) to establish a five percent interest rate, with certain exceptions, for loans from the revolving fund, and (2) to require the Federal Financing Bank to make a loan under an REA guarantee if requested by a borrower with such a guarantee. (95 Stat. 379; 7 U.S.C. 935, 936.)

1981. On December 22, the "Agriculture and Food Act of 1981," amended the Rural Electrification Act to extend for another ten years the authorization for Federal stock purchase in the Rural Telephone Bank. (95 Stat. 1347; 7 U.S.C. 946.)

Public Law 97-35
97th Congress

# An Act

To provide for reconciliation pursuant to section 301 of the first concurrent resolution on the budget tor the fiscal year 1982.

Aug. 13. 1981
[H.R. 3982]

SHORT TITLE

SECTION 1. This Act may be cited as the "Omnibus Budget Reconciliation Act of 1981".

Omnibus Budget Reconciliation Act of 1981.

*****

PART 4—RURAL ELECTRIFICATION ADMINISTRATION PROGRAMS

RURAL ELECTRIFICATION ACT AMENDMENTS

SEC. 165. (a) Section 305(b) of the Rural Electrification Act of 1936 (7 U.S.C. 935(b)) is amended to read as follows:

"(b) Insured loans made under this title shall bear interest at 5 per centum per annum. except that the Administrator may make insured loans to electric or telephone borrowers at a lesser interest rate, but not less than 2 per centum per annum, if, in the Administrator's sole discretion. the Administrator finds that the borrower—

"(1) has experienced extreme financial hardship; or

"(2) cannot, in accordance with generally accepted management and accounting principles and without charging rates to its customers or subscribers so high as to create a substantial disparity between such rates and the rates charged for similar service in the same or nearby areas by other suppliers, provide service consistent with the objectives of this Act.".

Insured loans. interest rates.

(b) Section 306 of the Rural Electrification Act of 1936 (7 U.S.C. 936) is amended by—

(1) inserting immediately after the second sentence the following: "With respect to guarantees issued by the Administrator under this section, on the request of the borrower of any such loan so guaranteed, the loan shall be made by the Federal Financing Bank and at a rate of interest that is not more than the rate of interest applicable to other similar loans then being made or purchased by the Bank."; and

(2) striking our "a loan insured at the standard rate" in the fourth sentence and inserting in lieu thereof "an insured loan".

(c) Section 307 of the Rural Electrification Act of 1936 (7 U.S.C. 937) is amended by striking out "a loan insured at the standard rate" and inserting in lieu thereof "an insured loan".

(d) The amendments made by subsection (a) of this section shall apply to loans the applications for which are received by the Rural Electrification Administration after July 24, 1981.

7 USC 935 note



Public Law 97-98
97th Congress

# An Act

To provide price-and income protection for farmers, assure consumers an abundance of food and fiber at reasonable prices, continue food assistance to low-income households. and for other purposes.

Dec. 22, 1981
[S. 884]

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled* That this Act, with the following table of contents, may be cited as the "Agriculture and Food Act of 1981".

Agriculture and Food Act of 1981. 7 USC 1281 note.

*****

RURAL TELEPHONE BANK AMENDMENT

SEC. 1607. Section 406 of the Rural Electrification Act of 1936 (7 U.S.C. 946) is amended by—

(1) inserting in the second sentence of subsection (a) "but not later than fiscal year 1991" after "thereafter", and striking out "$300,000,000" and inserting in lieu thereof "$600,000,000"; and

(2) striking out in the first sentence of subsection (c) "September 30, 1985" and inserting in lieu thereof "September 30, 1995", and striking out "and after the amount of class A and class B stock issued totals $400,000,000,".

## Extending and Improving Service

REA's programs have been very successful in extending electric and telephone service to persons in rural areas. By 1953 more than 90 percent of all farms in the U.S. had electricity; for telephone service, the 90 percent mark was passed in 1976.

CHART C-1

PERCENT OF FARMS WITH ELECTRIC AND TELEPHONE SEPVICE

U. S. TOTALS

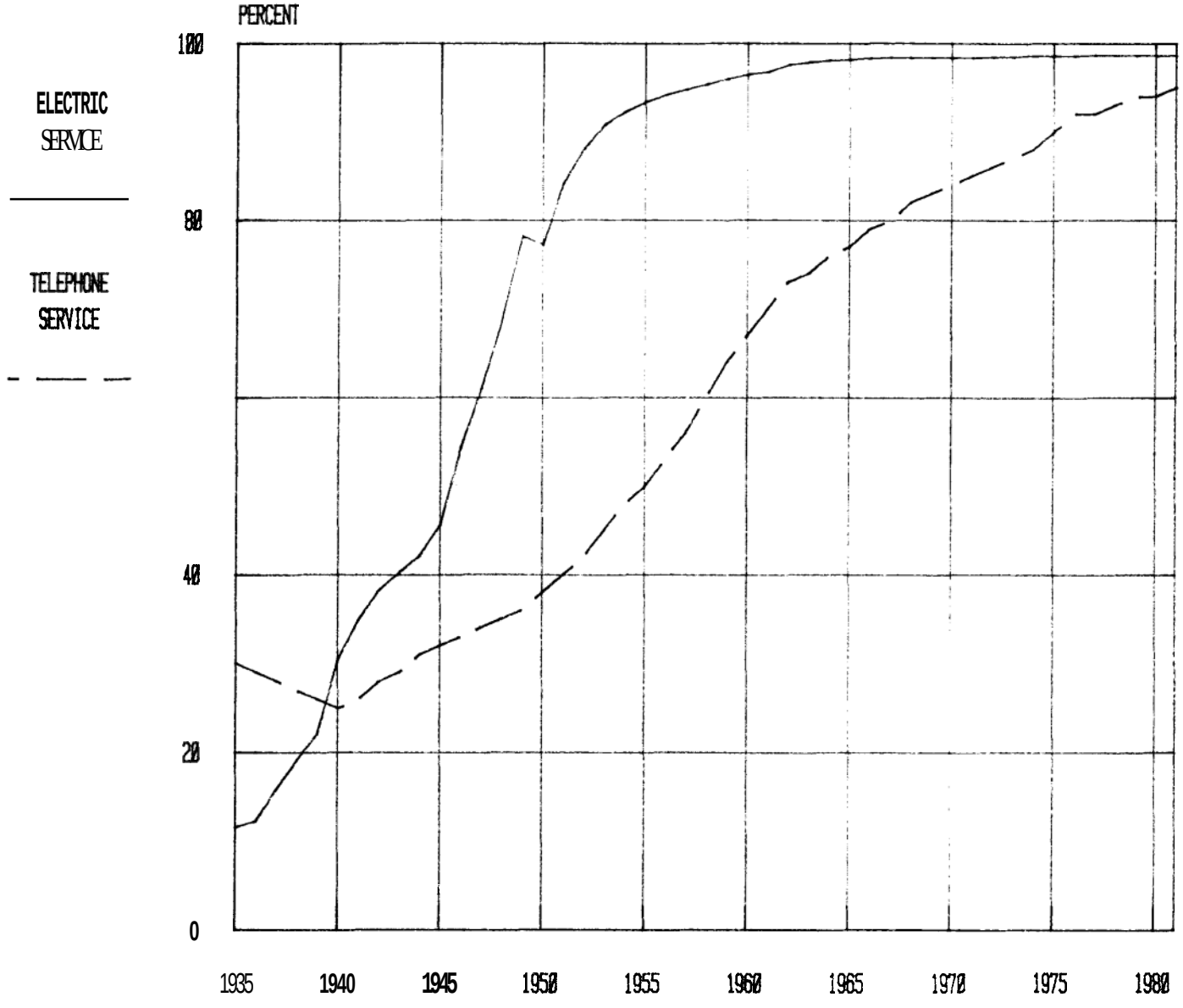


CHART C-1

## Percent of Farms with Electric and Telephone Service

| Fiscal Year | Electricity | Telephone |
|---|---|---|
| 1935 | 11.6 | --- |
| 1936 | 12.3 | --- |
| 1937 | 15.8 | --- |
| 1938 | 19.1 | --- |
| 1939 | 22.1 | --- |
| 1940 | 30.4 | 25% |
| 1941 | 34.9 | --- |
| 1942 | 38.3 | --- |
| 1943 | 40.3 | --- |
| 1944 | 42.2 | --- |
| 1945 | 45.7 | 32% |
| 1946 | 54.3 | --- |
| 1947 | 61.0 | 34% |
| 1948 | 68.6 | 35% |
| 1949 | 78.2 | 36% |
| 1950 | 77.2 | 38% |
| 1951 | 84.2 | 40% |
| 1952 | 88.1 | 42% |
| 1953 | 90.8 | 45% |
| 1954 | 92.3 | 48% |
| 1955 | 93.4 | 50% |
| 1956 | 94.2 | 53% |
| 1957 | 94.8 | 56% |
| 1958 | 95.4 | 60% |
| 1959 | 96.0 | 64% |
| 1960 | 96.5 | 67% |
| 1961 | 96.8 | 70% |
| 1962 | 97.6 | 73% |
| 1963 | 97.9 | 74% |
| 1964 | 98.1 | 76% |
| 1965 | 98.2 | 77% |
| 1966 | 98.3 | 79% |
| 1967 | 98.4 | 80% |
| 1968 | 98.4 | 82% |
| 1969 | 98.4 | 83% |
| 1970 | 98.4 | 84% |
| 1971 | 98.4 | 85% |
| 1972 | 98.5 | 86%. |
| 1973 | 98.5 | 87% |
| 1974 | 98.6 | 88% |
| 1975 | 98.6 | 90% |
| 1976 | 98.6 | 92% |
| 1977 | 98.7 | 92% |
| 1978 | 98.7 | 33% |
| 1979 | 98.7 | 94% |
| 1980 | 98.7 | 94% |
| 1981 | 98.7 | 95% |

In addition to financing the extension of electric and telephone service to rural areas, REA has provided credit to rural telephone utilities for system improvements that have dramatically upgraded the quality of telephone service in rural America.

Before the REA telephone program, rural telephone service was often antiquate:: and unreliable--even where it was available.

Today modern and reliable telephone service is available for people who live, work or do business in rural areas. The availability of modern communications systems has improved the quality of life of rural people and has strengthened their local economies. Improvement continues as more rural residents receive single party service.

GRADES OF SERVICE PROVIDED TO SUBSCRIBERS SERVED BY REP. TELEPHONE BORROWERS

CHART C-2

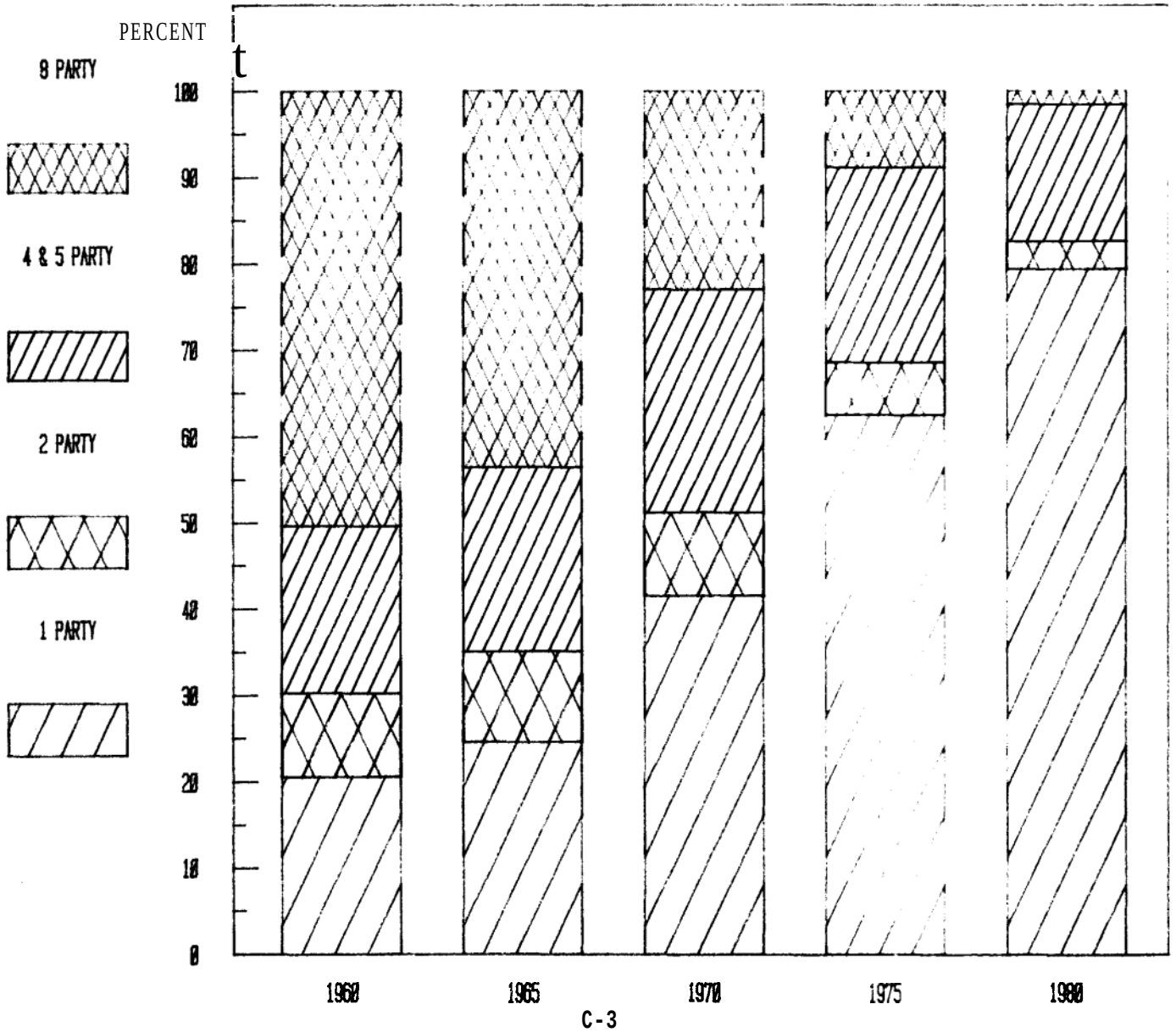


TABLE C-2

## Number of Subscribers Served by REA Telephone Borrowers, by Grade of Service

(Subscribers in thousands)

| Year | One Party | | Two Party | | Four and Five Party | | Eight Party* | |
|---|---|---|---|---|---|---|---|---|
| | No. | Percent | No. | Percent | No. | Percent | No. | Percent |
| 1960 | 236.0 | 20.8 | 108.1 | 9.5 | 219.4 | 19.3 | 571.5 | 50.4 |
| 1965 | 428.7 | 24.8 | 182.0 | 10.5 | 362.7 | 21.0 | 752.9 | 43.7 |
| 1970 | 927.3 | 41.6 | 227.4 | 9.8 | 598.7 | 25.6 | 536.1 | 23.0 |
| 1975 | 1,909.2 | 62.7 | 183.3 | 6.0 | 685.2 | 22.5 | 267.6 | 8.8 |
| 1980 | 3,383.1 | 79.4 | 136.1 | 3.2 | 669.7 | 15.7 | 73.4 | 1.7 |

* Includes service stations (switchers) which represent less than 1 percent of the total number of subscribers,

Meeting the Growing Demand for Service

Rural electric and telephone systems have been able to meet an ever increasing demand for service. Each year the number of households served by REA electric and telephone borrowers has increased. In the early years this growth was mainly due to service being extended to households that had never before had electricity or telephones. More recently the growth is primarily because of the rapid population increases that have occurred in rural America--particularly in "sunbelt" and western States.

CHART C-3

## NUMBER OF CONSUMERS & SUBSCRIBERS SERVED

BY REA ELECTRIC & TELEPHONE BORROWERS

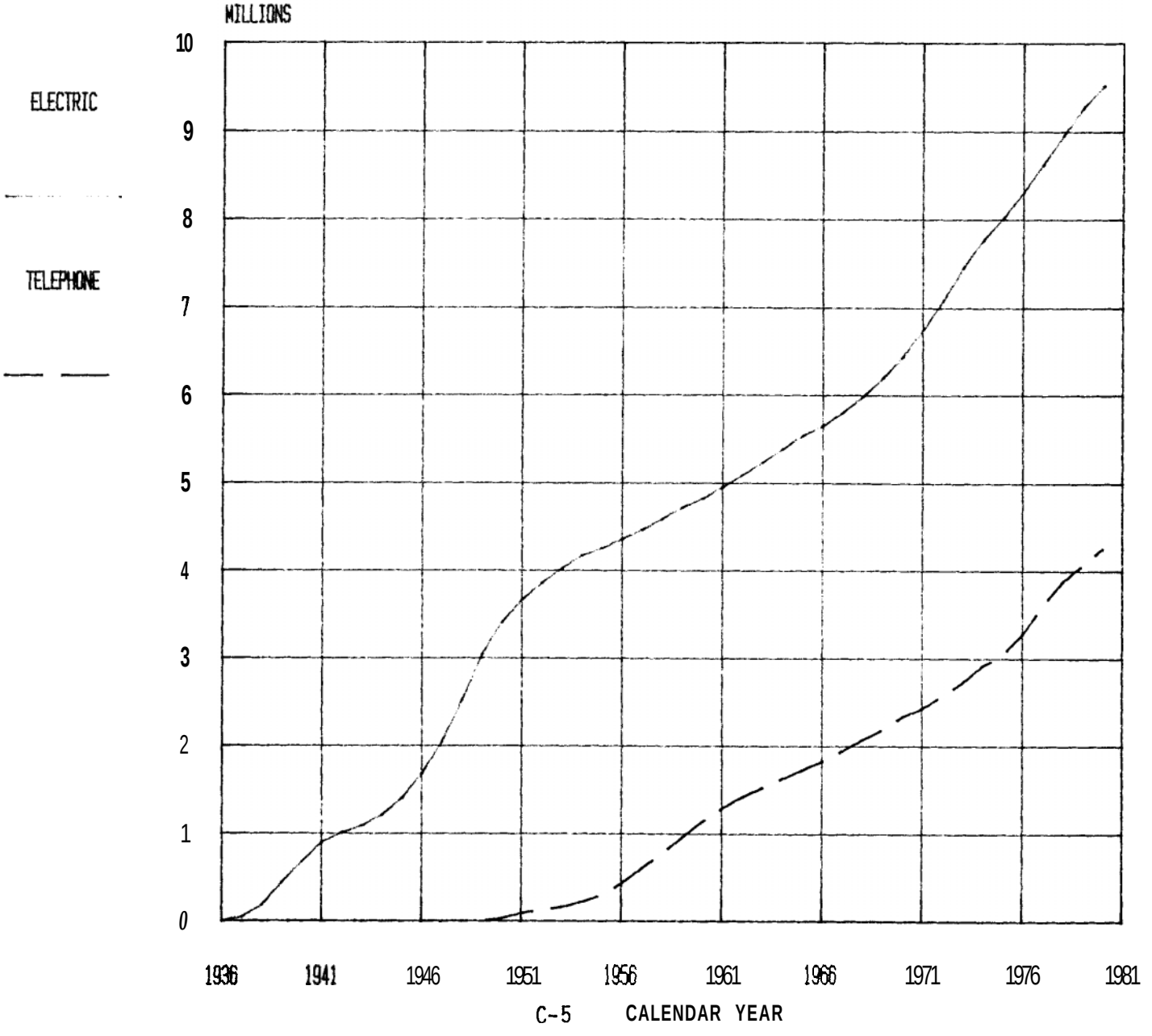


TABLE C-3

Number of Consumers and Subscribers Served by REA Electric and Telephone Borrowers (in Thousands)

| Fiscal Year | Electric Consumers | Telephone Subscribers |
|---|---|---|
| 1935 | --- | --- |
| 1936 | 7.5 | --- |
| 1937 | 43.9 | --- |
| 1938 | 176.4 | --- |
| 1939 | 435.6 | --- |
| 1940 | 674.5 | --- |
| 1941 | 902.3 | --- |
| 1942 | 1,012.3 | --- |
| 1943 | 1,087.8 | --- |
| 1944 | 1,216.8 | --- |
| 1945 | 1,408.9 | --- |
| 1946 | 1,683.9 | --- |
| 1947 | 2,046.1 | --- |
| 1948 | 2,518.5 | --- |
| 1949 | 3,040.4 | --- |
| 1950 | 3,413.4 | 29.1 |
| 1951 | 3,666 .0 | 86.9 |
| 1952 | 3,858.4 | 131.4 |
| 1953 | 4,024.8 | 157.4 |
| 1954 | 4,174.4 | 215.8 |
| 1955 | 4,251.3 | 296.2 |
| 1956 | 4,361.9 | 432.0 |
| 1957 | 4,466.4 | 604.7 |
| 1958 | 4,596.3 | 778.5 |
| 1959 | 4,721 .6 | 958.9 |
| 1960 | 4,825.8 | 1,142 .0 |
| 1961 | 4,955.6 | 1,291.5 |
| 1962 | 5,095.0 | 1,419.9 |
| 1963 | 5,237.9 | 1,523.4 |
| 1964 | 5,386.1 | 1,626.6 |
| 1965 | 5,541.5 | 1,726.4 |
| 1966 | 5,652.8 | 1,825.9 |
| 1967 | 5,806 .0 | 1,944.3 |
| 1968 | 5,986.1 | 2,067.0 |
| 1969 | 6,197.0 | 2,184.6 |
| 1970 | 6,442.3 | 2,334.5 |
| 1971 | 6,747.7 | 2,428.9 |
| 1972 | 7,076.2 | 2,574.8 |
| 1973 | 7,457.1 | 2,725.0 |
| 1974 | 7,767.8 | 2,919.1 |
| 1975 | 8,017.7 | 3,045.3 |
| 1976 | 8,311.8 | 3,283.2 |
| 1977 | 8,630.8 | 3,599.1 |
| 1978 | 8,962.5 | 3,877.1 |
| 1979 | 9,275.1 | 4,072.7 |
| 1980 | 9,523.6 | 4,262.4 |

Note: The number of consumers and subscribers served is approximately equal to the number of households and business establishments served.

In the case of electricity, the strong rural demand that has historically been experienced and met by rural electric utilities can be explained in part by the fact that alternatives to electricity are not available in many nonmetropolitan areas. for this reason electricity is used for home heating and major appliances to a greater extent in nonmetro than in metro areas. In the case of new housing, electricity is being used to an increasing extent.

CHART C-4

## ELECTRICITY USE FOR MAJOR APPLIANCES

METRO VS NON-METRO

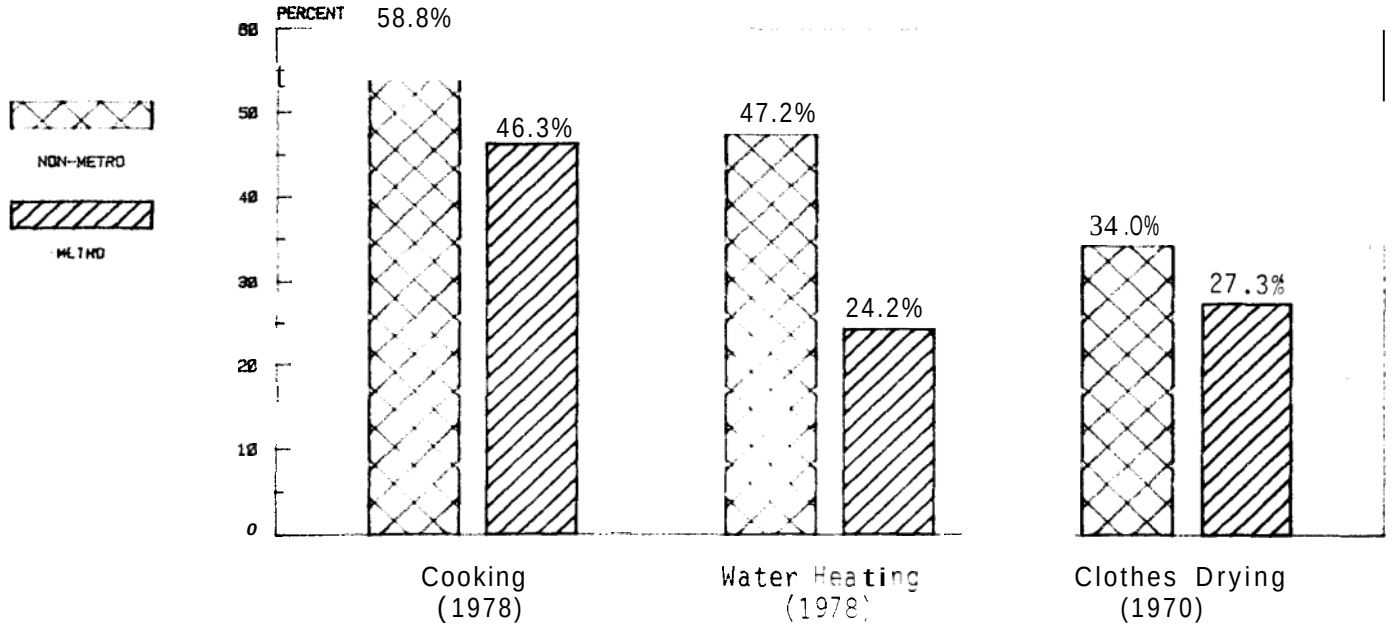
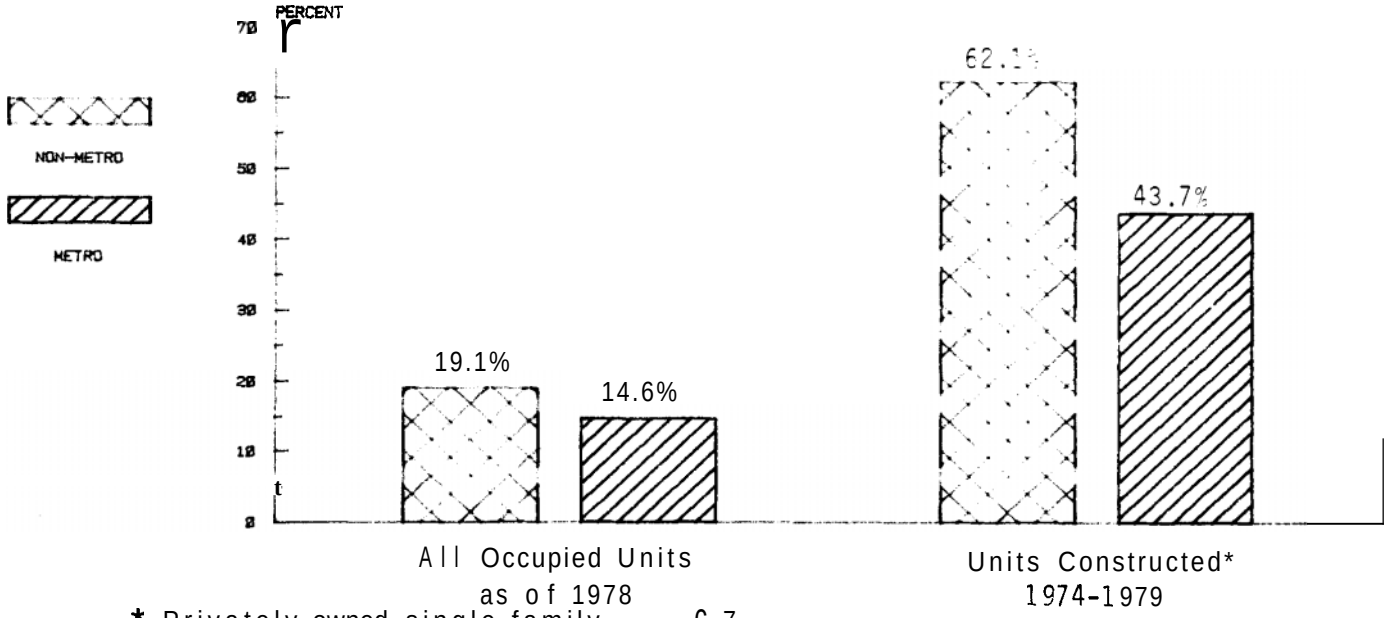



CHART C-5

## ELECTRICITY USE FOR HOME HEATING

METRO VS NON-METRO




* Privately owned single family

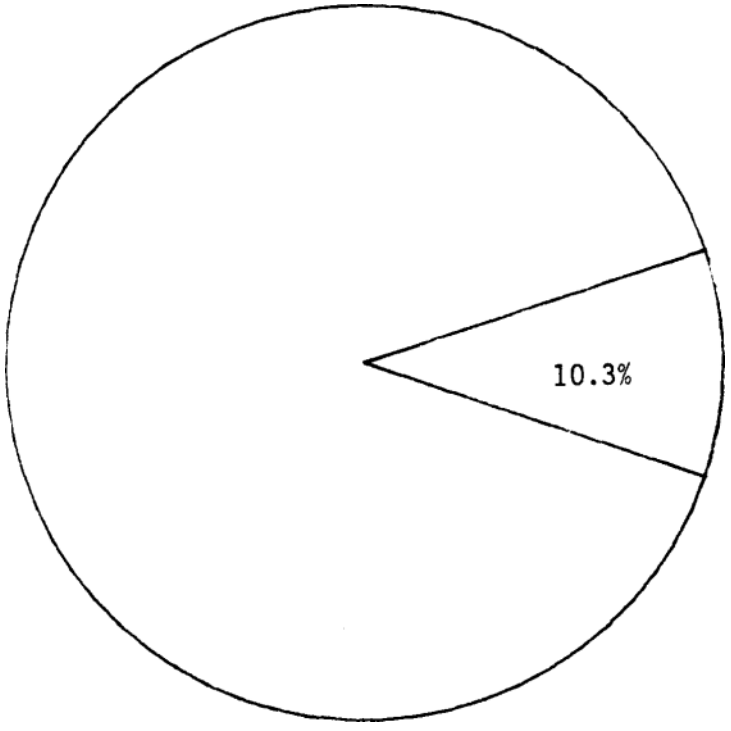
Today the rural electric and telephone utilities that receive financing from REA have developed into strong business organizations. Although not large when compared with many urban utilities, they are vital components of their respective industries.

CHART C-6

Percent of Electric Consumers and Telephone Subscribers Served by REA Borrowers

Electric Utility Industry

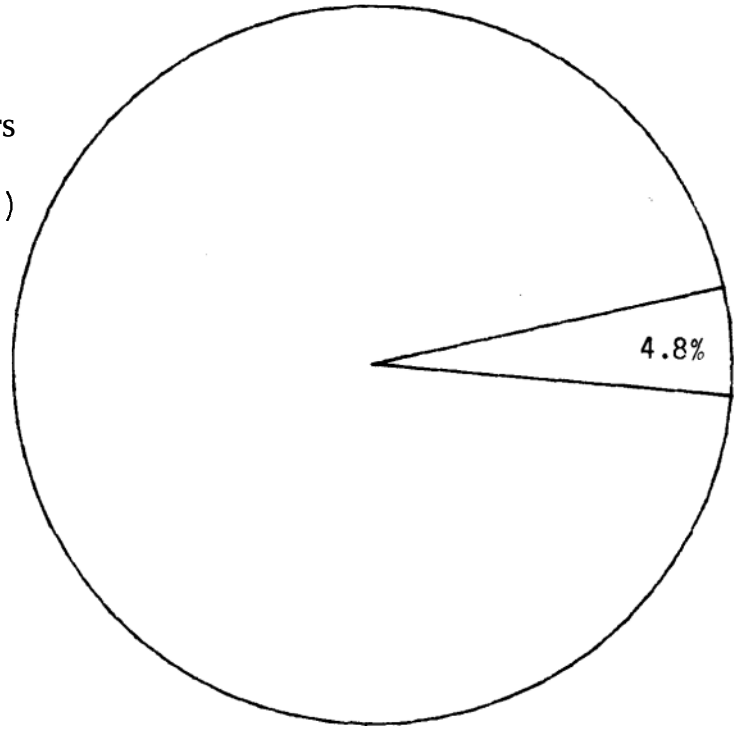
| Million Consumers Served, 1980 | |
|---|---|
| Total | 91.7 |
| REA | 9.4 |




REP Electric Borrowers

Telephone Utility Industry

| Million Subscribers Served, 1980 | |
|---|---|
| Total | 89.1 (est.) |
| REA | 4.3 |




REA Telephone Borrowers

As of Cecember 31, 1981, REA borrowers had received more than $47.8 billion from REA loans, guarantee commitments and RTB loans. Loan guarantee commitments account for most of this financing, however, a large proportion has been provided by REA loans at the two percent and five percent interest rates.

CHART D-1

CUMULATIVE REA AND RTB LOANS AND REA LOAN GUARANTEE COMMITMENTS, AS OF DECEMBER 31, 1981

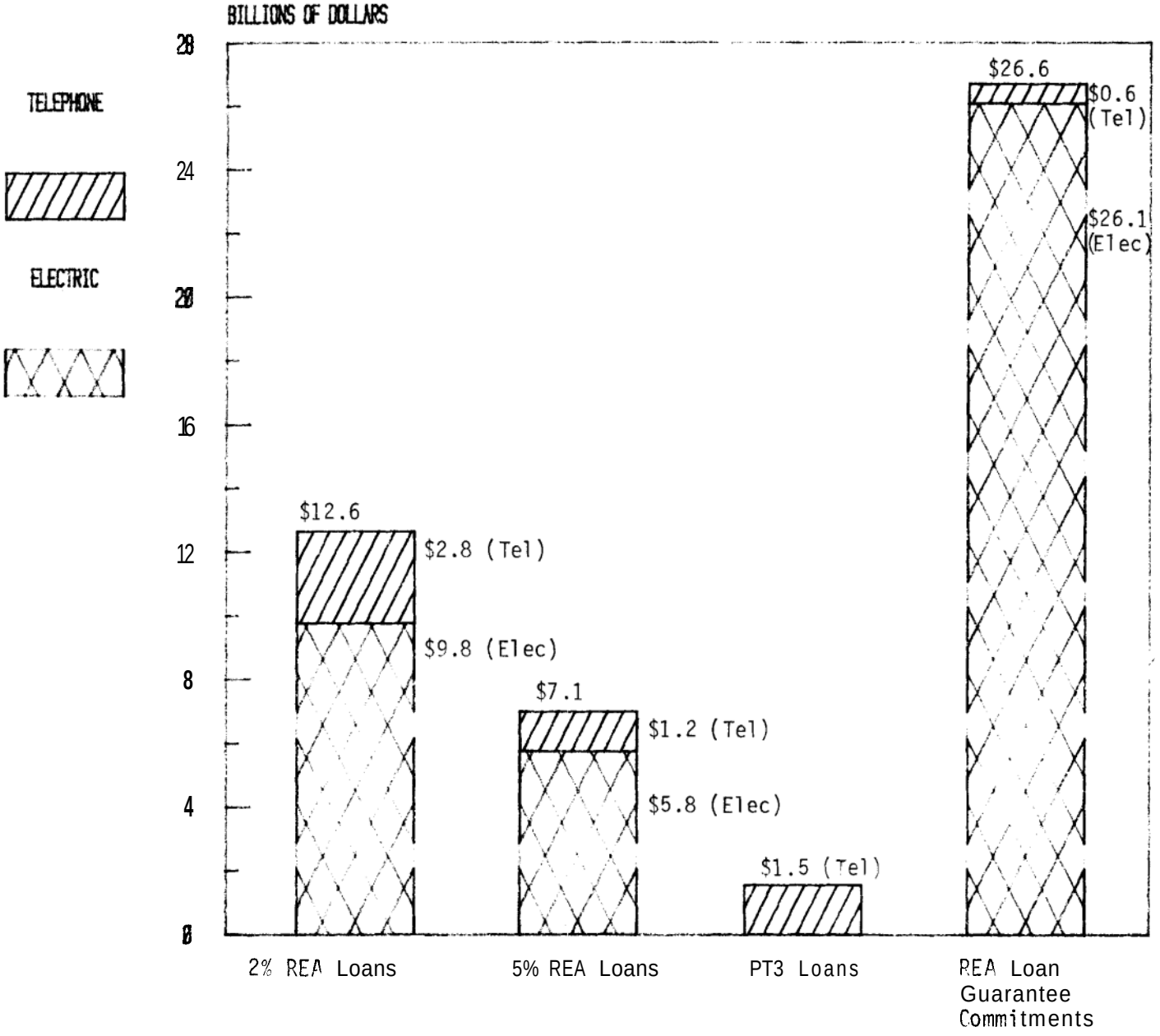


TABLE D-1

**Cumulative REA Loans to Electric and Telephone Borrowers, as of December 31, 1981**

| | Electric Loans | Telephone Loans |
|---|---|---|
| UNITED STATES | $15,634,514,821 | $4,076,323,237 |
| Alabama | 327,833,927 | 114,377,988 |
| Alaska | 539,147,196 | 59,875,000 |
| Arizona | 142,077,419 | 32,615,000 |
| Arkansas | 510,361,104 | 78,389,166 |
| California | 62,329,950 | 65,662,614 |
| Colorado | 719,347,746 | 38,381,894 |
| Connecticut | --- | --- |
| Delaware | 25,883,881 | --- |
| Florida | 399,564,233 | 37,662,463 |
| Georgia | 512,495,712 | 190,782,285 |
| Hawaii | --- | --- |
| Idaho | 93,188,683 | 22,715,453 |
| Illinois | 382,068,447 | 64,621,959 |
| Indiana | 321,019,723 | 90,704,558 |
| Iowa | 545,549,225 | 117,730,417 |
| Kansas | 420,946,828 | 153.619,879 |
| Kentucky | 749,042,180 | 188,883,000 |
| Louisiana | 423,351,909 | 73,601,118 |
| Maine | 21,430,765 | 22,172,473 |
| Maryland | 115,906,500 | 2,061.000 |
| Massachusetts | --- | 1,835,000 |
| Michigan | 263,979,812 | 76,644,571 |
| Minnesota | 715,885,443 | 186,586,240 |
| Mississippi | 401,668,504 | 71,754,000 |
| Missouri | 876,388,029 | 153,857,352 |
| Montana | 215,140,495 | 123,397,000 |
| Nebraska | 387,544,854 | 73,437,977 |
| Nevada | 53,657,563 | 5,235,000 |
| New Hampshire | 58,017,884 | 11,703,000 |
| New Jersey | 9,786,660 | 14,295,000 |
| New Mexico | 230,568,517 | 90,031,000 |
| New York | 20,979,891 | 38,938,899 |
| North Carolina | 426,646,211 | 161,550,323 |
| North Dakota | 741,752,332 | 117,206,114 |
| Ohio | 296,568,543 | 23,043,571 |
| Oklahoma | 602,170,405 | 154,192,395 |
| Oregon | 203,226,749 | 44,681,641 |
| Pennsylvania | 163,527,329 | 64,011,321 |
| Rhode Island | --- | --- |
| South Carolina | 408,539,545 | 155,845,994 |
| South Dakota | 345,693,525 | 102,255,016 |
| Tennessee | 265,818,033 | 197,334,000 |
| Texas | 1,306,166,226 | 355,760,294 |
| Utah | 59,915,496 | 20,249,000 |
| Vermont | 44,453,918 | 3,887,000 |
| Virginia | 293,722,756 | 59,199,000 |
| Washington | 164,522,598 | 30,121,490 |
| West Virginia | 5,542,633 | 44,572,000 |
| Wisconsin | 396,996,175 | 7136,471,777 |
| Wyoming | 194,549,191 | 12,138,000 |
| Puerto Rico | 166,190,000 | 85,527,000 |
| Guam | --- | 37,206,000 |
| AT — | 3,350,126 | --- |

TABLE D-2

Cumulative REP. Loan Guarantee Commitments and Rural Telephone Bank Loans, As of December 31, 1981

| | REA Loan Guarantee Commitments | | Rural Telephone Bank Loans |
|---|---|---|---|
| | Electric | Telephone | |
| UNITED STATES | $26,066,909,000.00 | $553,320,000.00 | $1,529,473,895.00 |
| Alabama | 270,873,000.00 | 11,934,000.00 | 50,009,400.00 |
| Alaska | 179,804,000.00 | 46,943,000 .00 | 53,814,600.00 |
| Arizona | 298,779,000.00 | 41,700,000.00 | 68,535,233.00 |
| Arkansas | 693,788,000.00 | 25,244,000 .00 | 47,320,560 .00 |
| California | --- | 10,440,000.00 | 34,437,900 .00 |
| Colorado | 1,455,742,000.00 | --- | 13,331,419.00 |
| Connecticut | | | |
| Delaware | | | |
| Florida | 1,114,938,000.00 | 48,590,000.00 | 31,975,650.00 |
| Hawaii | | | |
| Idaho | 130,000.00 | --- | 3,480,750.00 |
| Illinois | 465,685,000.00 | --- | 18,168,597.00 |
| Indiana | 1,928,484,000.00 | --- | 14,717,850.00 |
| Iowa | 197,502,000.00 | 9,700,000.00 | 22,234,224.00 |
| Kansas | 757,147,000.00 | 20,440,000.00 | 43,019,757.00 |
| Kentucky | 2,970,111,000.00 | 16,000,000.00 | 38,881,500.00 |
| Louisiana | 1,992,381,000.00 | 13,925,000.00 | 30,291,450.00 |
| Maine | --- | 5,300,000.00 | 16,298,100.00 |
| Maryland | --- | --- | 2,326,800.00 |
| Massachusetts | --- | --- | 519,750.00 |
| Michigan | 420,870,000.00 | 5,600,000.00 | 24,975,300.00 |
| Minnesota | 1,279,322,000.00 | 10,239,000.00 | 54,301,936.00 |
| Mississippi | 609,913,000.00 | 5,200,000.00 | 8,685,600.00 |
| Missouri | 1,626,179,000.00 | 11,470,000.00 | 44,563,050.00 |
| Montana | 5,769,000.00 | --- | 3,733,800.00 |
| Nebraska | --- | --- | 19,667,550.00 |
| Nevada | --- | --- | 8,319,150.00 |
| New Hampshire | 75,250,000.00 | --- | 4,772,250.00 |
| New Jersey | --- | 6,500,000.00 | 18,234,300.00 |
| New Mexico | 341,380,000.00 | --- | --- |
| New York | --- | 23,645,000.00 | 30,238,950.00 |
| North Carolina | 945,460,000.00 | 31,158,000.00 | 46,712,400.00 |
| North Dakota | 2,284,077,000.00 | | 14,638,733.00 |
| Ohio | 45,610,000.00 | | 3,511,200.00 |
| Oklahoma | 1,083,144,000.00 | 2,744,000.00 | 69,413,630.00 |
| Oregon | 69,827,000.00 | --- | 35,207,550.00 |
| Pennsylvania | 406,408,000.00 | 43,352,000.00 | 148,239,000.00 |
| Rhode Island | | | |
| South Carolina | 325,699,000.00 | 7,885,000.00 | 76,095,600.00 |
| South Dakota | 12,178,000.00 | --- | 15,444,450.00 |
| Tennessee | --- | 14,358,000.00 | 50,151,150.00 |
| Texas | 797,881,000.00 | 49,900,000.00 | 126,566,700.00 |
| Utah | 981,136,000.00 | --- | 2,662,800.00 |
| Vermont | 23,306,000.00 | --- | 4,523,400.00 |
| Virginia | --- | --- | 14,993,318.00 |
| Washington | --- | --- | 13,131,300.00 |
| West Virginia | --- | 5,250,000.00 | 3,828,300.00 |
| Wisconsin | 260,359,000.00 | 23,700,000.00 | 110,320,588.00 |
| Wyoming | 6,100,000.00 | --- | 6,211,800.00 |
| Puerto Rico | | | |

TABLE D-3 REA Loans to Electric and Telephone Borrowers, Calendar Year 1981

| | Electric Loans | Telephone Loans |
|---|---|---|
| UNITED STATES | $777,638,000 | $236,345,000 |
| Alabama | 5,689,000 | 12,092,000 |
| Alaska | 43,773,000 | 12,774,000 |
| Arizona | 12,518,000 | --- |
| Arkansas | 21,148,000 | 7,042,000 |
| California | 4,329,000 | 4,227,000 |
| Colorado | 30,507,000 | --- |
| Connecticut | --- | --- |
| Delaware | --- | --- |
| Florida | 14,310,000 | --- |
| Georgia | 35,210,000 | 420,000 |
| Hawaii | --- | --- |
| Idaho | --- | --- |
| Illinois | 21,267,000 | --- |
| Indiana | 13,187,000 | 6,308,000 |
| Iowa | 11,507,000 | 5,046,000 |
| Kansas | 10,835,000 | 3,608,000 |
| Kentucky | 23,445,000 | 19,361,000 |
| Louisiana | 62,289,000 | 4,498,000 |
| Maine | 3,027,000 | 556,000 |
| Maryland | 5,383,000 | --- |
| Massachusetts | --- | --- |
| Michigan | 5,956,000 | 5,412,000 |
| Minnesota | 17,210,000 | 3,512,000 |
| Mississippi | 14,297,000 | 3,045,000 |
| Missouri | 29,521,000 | 27,043,000 |
| Montana | 31,401,000 | 12,700,000 |
| Nebraska | 27,083,000 | 367,000 |
| Nevada | 5,677,000 | --- |
| New Hampshire | 5,299,000 | --- |
| New Jersey | --- | --- |
| New Mexico | 11,285,000 | 31,975,00 |
| New York | 2,514,000 | 992,000 |
| North Carolina | 26,085,000 | 7,875,000 |
| North Dakota | 34,292,000 | --- |
| Ohio | 11,243,000 | 6,024,000 |
| Oklahoma | 36,789,000 | 4,503,000 |
| Oregon | 9,422,000 | 1,943,000 |
| Pennsylvania | 10,427,000 | 390,000 |
| Rhode Island | --- | --- |
| South Carolina | 27,032,000 | --- |
| South Dakota | 14,118,000 | 3,561,000 |
| Tennessee | 7,630,000 | 8,900,000 |
| Texas | 90,869,000 | 15,688,000 |
| Utah | 8,428,000 | 3,699,000 |
| Vermont | --- | --- |
| Virginia | 1,476,000 | 2,250,000 |
| Washington | 6,004,000 | --- |
| West Virginia | 496,000 | --- |
| Wisconsin | 7,838,000 | 10,554,000 |
| Wyoming | 16,822,000 | 227,000 |
| Puerto Rico | --- | --- |
| Guam | --- | 9,757,000 |

REA telephone borrowers have received a greater amount of their financing needs from REA loans than from other sources. These REA loans are supplemented by loans from the Rural Telephone Bank and REA guarantees of loans from other sources--mainly the Federal Financing Bank.

CHART D-2

# SOURCES OF LONG-TERM FINANCING

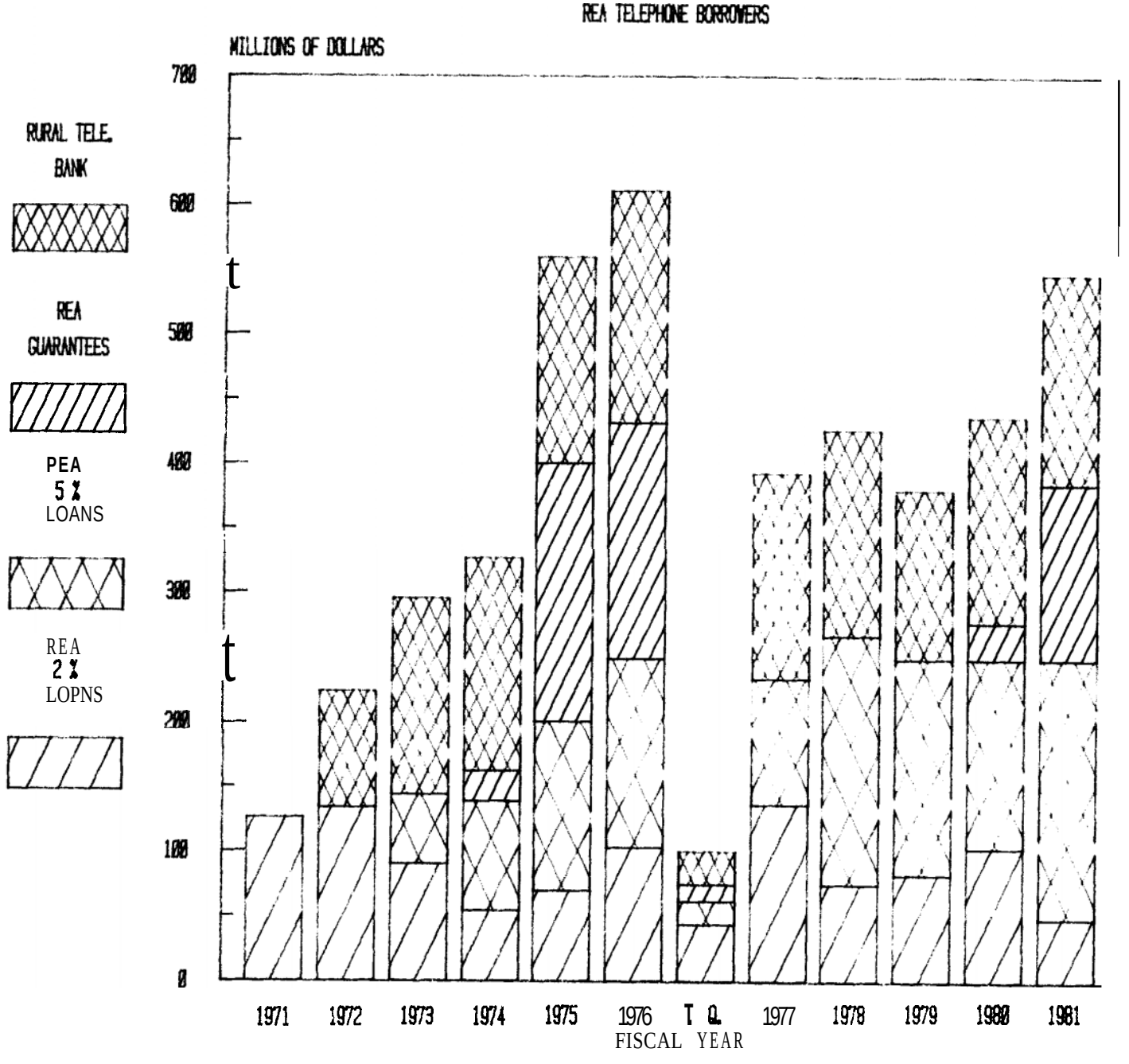


TABLE D-6

Long-Term Financing Approved
by Fiscal Year
REA Telephone Borrowers
(in millions)

| Fiscal Year | REA 2% | REA 5% | Non-REA REA Guarantee Commitments | Non-REA Rural Telephone Bank | Total |
|---|---|---|---|---|---|
| 1971 | $125.0 | --- | --- | --- | $125.0 |
| 1972 | 133.7 | --- | --- | $ 91.0 | 224.7 |
| 1973 | 90.0 | $ 55.0 | --- | 150.0 | 295.0 |
| 1974 | 55.2 | 84.8 | --- | 163.0 | 303.0 |
| 1975 | 70.0 | 129.9 | $200.0 | 160.2 | 560.1 |
| 1976 | 103.8 | 146.3 | 181.6 | 180.1 | 612.8 |
| TQ | 43.1 | 19.4 | 12.3 | 26.5 | 101.2 |
| 1977 | 136.5 | 96.7 | --- | 160.3 | 393.6 |
| 1978 | 74.7 | 191.9 | --- | 159.2 | 425.8 |
| 1979 | 81.6 | 168.3 | --- | 130.8 | 380.7 |
| 1980 | 103.2 | 146.9 | 27.4 | 160.0 | 437.5 |
| 1981 | 49.7 | 200.1 | 136.4 | 159.9 | 546.1 |

Until the 1973 amendment to the Rural Electrification Act, virtually all financing to REA electric borrowers was supplied by direct REA loans at an interest rate of two percent. Since 1973 the amount of financing received by rural electric systems has increased greatly and most of this financing has been provided by non-REA sources, primarily the Federal Financing Bank (FFB), with an REA guarantee, at FFB's market rate of interest.

# SOURCES OF LONG-TERM FINANCING

CHART D-3

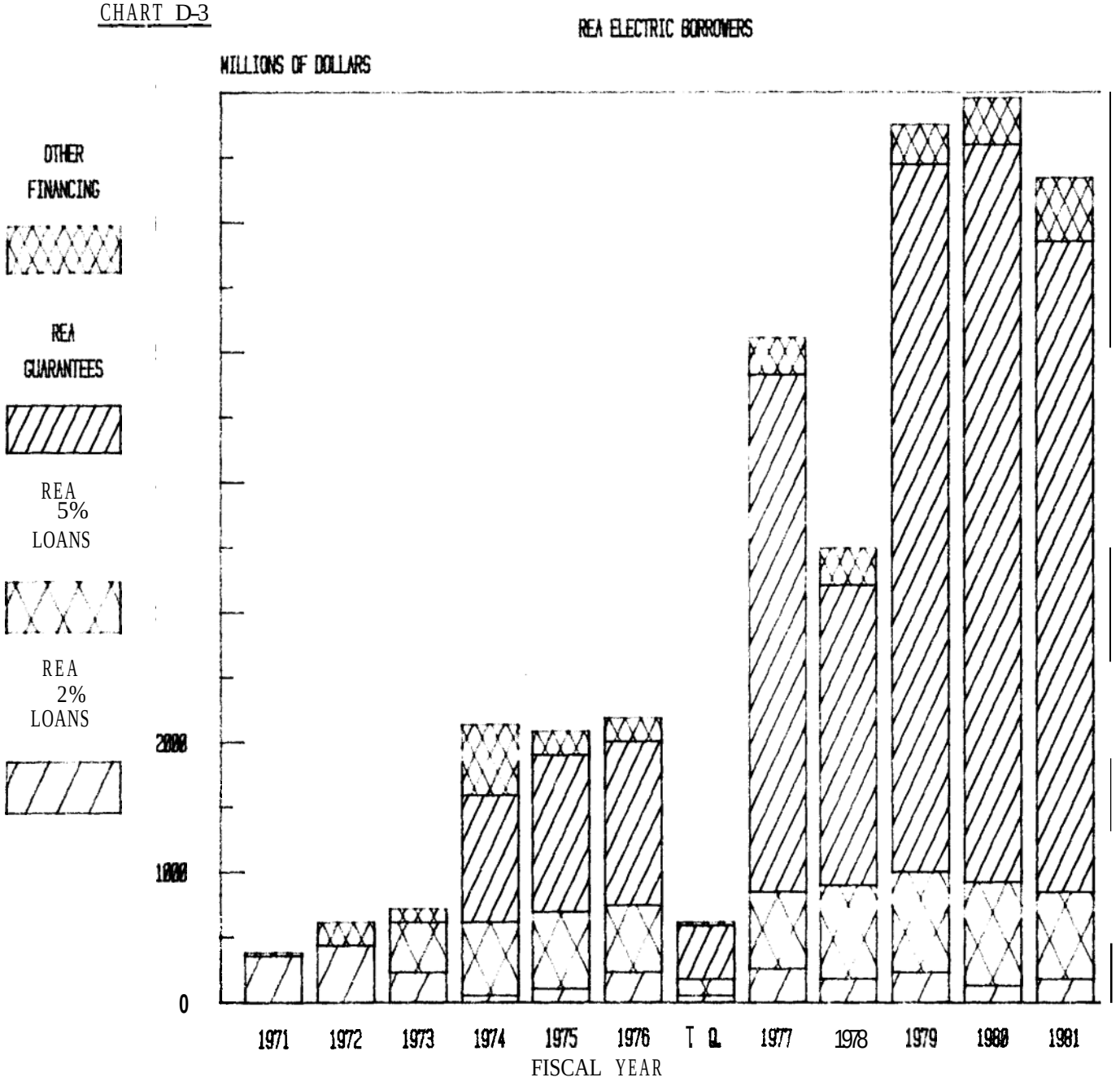


TABLE D-7

Long-Term Financing Approved
by Fiscal Year
All REA Electric Borrowers
(in millions)

| Fiscal Year | REA 2% | REA 5% | Non-REA REA Guarantee Commitments | Non-REA Other Financing | Total Long-Term Financing Approved During FY |
|---|---|---|---|---|---|
| 1969 | $344.8 | --- | --- | --- | $ 344.8 |
| 1970 | 345.0 | --- | --- | --- | 345.0 |
| 1971 | 361.8 | --- | --- | $ 12.8 | 374.6 |
| 1972 | 438.3 | --- | --- | 168.4 | 606.7 |
| 1973 | 235.1 | $382.8 | --- | 107.6 | 725.5 |
| 1974 | 65.5 | 553.1 | $ 974.4 | 533.9 | 2,126.9 |
| 1975 | 105.0 | 595.0 | 1,206.3 | 165.0 | 2,071.3 |
| 1976 | 222.5 | 527.5 | 1,241.5 | 198.4 | 2,189.9 |
| TQ | 47.2 | 140.3 | 403.9 | 31.9 | 623.3 |
| 1977 | 268.2 | 581.8 | 3,985.5 | 278.3 | 5,113.8 |
| 1978 | 176.2 | 723.8 | 2,309.1 | 276.3 | 3,485.4 |
| 1979 | 222.9 | 777.1 | 5,429.7 | 311.9 | 6,741.6 |
| 1980 | 142.5 | 782.5 | 5,660.1 | 368.3 | 6,953.4 |
| 1981 | 178.3 | 671.7 | 4,994.9 | 503.9 | 6,348.8 |

REA electric distribution borrowers receive most of their financing from REA at a five percent interest rate. The remainder is obtained from REA at interest rates as low as two percent (a very small amount since the 1981 amendment to the RE Act) and from non-REA sources such as the National Rural Utilities Cooperative Finance Corporation (CFC) and the Bank for Cooperatives.

CHART D-4

## SOURCES OF LONG-TERM FINANCING

REA ELECTRIC DISTRIBUTION BORROWERS

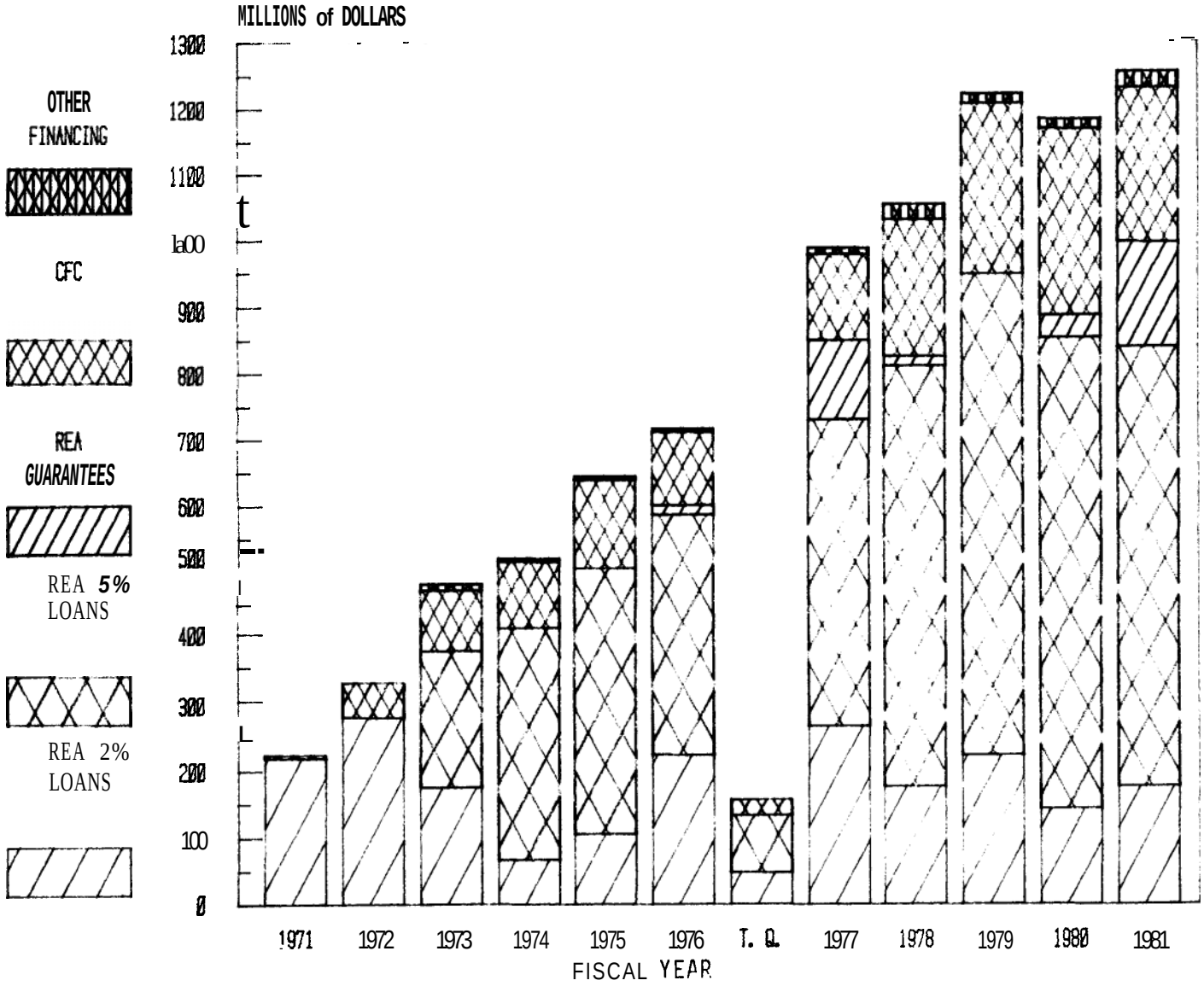


TABLE D-8

Long-Term Financing Approved
by Fiscal Year
REA Electric Distribution Borrowers
(in millions)

| Fiscal Year | REA 2% | REA 5% | Non-REA REA Guarantee Commitments | Non-REA CFC | Non-REA Other Financing | Total Long-Term Financing Approved During FY |
|---|---|---|---|---|---|---|
| 1969 | $162.0 | --- | --- | --- | --- | $ 162.0 |
| 1970 | 269.7 | --- | --- | --- | --- | 269.7 |
| 1971 | 222.0 | --- | --- | $ 1.8 | --- | 223.8 |
| 1972 | 282.6 | --- | --- | 50.7 | $ 0.6 | 333.9 |
| 1973 | 176.8 | $206.0 | --- | 88.3 | 8.9 | 480.0 |
| 1974 | 65.5 | 347.6 | --- | 99.9 | 7.1 | 520.1 |
| 1975 | 105.0 | 398.5 | --- | 134.7 | 6.6 | 644.8 |
| 1976 | 222.5 | 365.9 | $ 13.4 | 108.1 | 6.1 | 716.0 |
| TQ | 47.2 | 88.3 | --- | 20.4 | 1.6 | 157.5 |
| 1977 | 268.2 | 462.1 | 117.8 | 129.9 | 6.6 | 984.6 |
| 1978 | 176.2 | 633.8 | 15.7 | 204.5 | 22.1 | 1,052.3 |
| 1979 | 222.9 | 727.5 | --- | 254.6 | 13.3 | 1,218.3 |
| 1980 | 142.4 | 709.8 | 32.5 | 280.8 | 14.9 | 1,180.4 |
| 1981 | 178.3 | 660.5 | 156.3 | 234.5 | 23.3 | 1,252.9 |

REA electric power supply borrowers receive most of the financing approved by REA; almost all of this is provided by non-REA sources, mainly the Federal Financing Bank, with an REA loan guarantee. Since the 1973 amendment to the Rural Electrification Act, which gave REA the authority to guarantee loans made by other lenders, REA's program of financing for power supply projects has grown from a modest one to one of very large magnitude.

CHART D-5

# SOURCES OF LONG-TERM FINANCING

REA ELECTRIC POWER SUPPLY BORROWERS

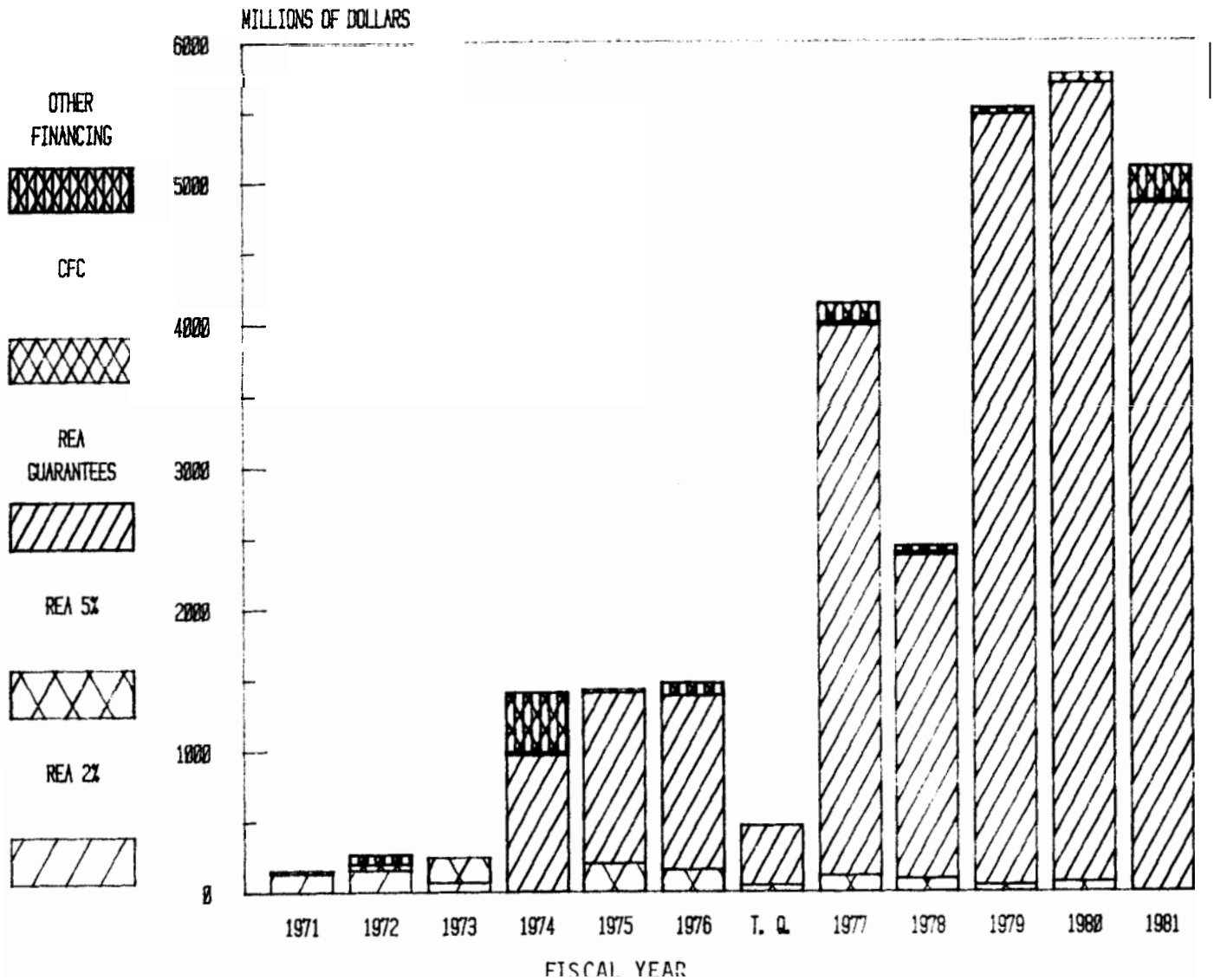


TABLE D-9

Long-Term Financing Approved
by Fiscal Year
REA Electric Power Supply Borrowers
(in millions)

| Fiscal Year | REA 2% | REA 5% | Non-REA REA Guarantee Commitments | Non-REA CFC | Non-REA Other Financing | Total Long-Term Financing Approved During FY |
|---|---|---|---|---|---|---|
| 1969 | $182.8 | --- | --- | --- | --- | $ 182.8 |
| 1970 | 75.2 | --- | --- | --- | --- | 75.2 |
| 1971 | 139.8 | --- | --- | $ 11.0 | --- | 150.8 |
| 1972 | 155.6 | --- | --- | 42.1 | $ 75.0 | 272.7 |
| 1973 | 58.3 | $176.8 | --- | 10.1 | --- | 245.2 |
| 1974 | --- | 205.5 | $ 974.4 | 4.9 | 422.0 | 1,606.8 |
| 1975 | --- | 196.5 | 1,206.3 | 23.7 | --- | 1,426.5 |
| 1976 | --- | 161.6 | 1,228.1 | 8.1 | 76.1 | 1,473.9 |
| TQ | --- | 52.0 | 403.9 | -0- | 9.9 | 465.8 |
| 1977 | --- | 119.7 | 3,867.7 | 20.4 | 121.4 | 4,129.2 |
| 1978 | --- | 90.0 | 2,293.4 | 5.5 | 44.2 | 2,433.1 |
| 1979 | --- | 49.6 | 5,429.7 | 8.4 | 35.6 | 5,523.3 |
| 1980 | --- | 72.7 | 5,627.6 | 61.4 | 11.2 | 5,772.9 |
| 1981 | --- | 11.2 | 4,838.7 | 13.2 | 232.9 | 5,096.0 |

The number of REA electric borrowers has not changed much since about 1950. The small increases that have occurred during the last several years have been mainly because of the formation of new power supply systems that are wholly owned by **REA** electric distribution borrowers.

The number of **REA** telephone borrowers increased rapidly during the first 10-15 years of the program. The number of telephone borrowers continues to increase each year mainly because of initial loans to existing telephone utilities to extend and upgrade telephone service to rural subscribers.

CHART **D-6**

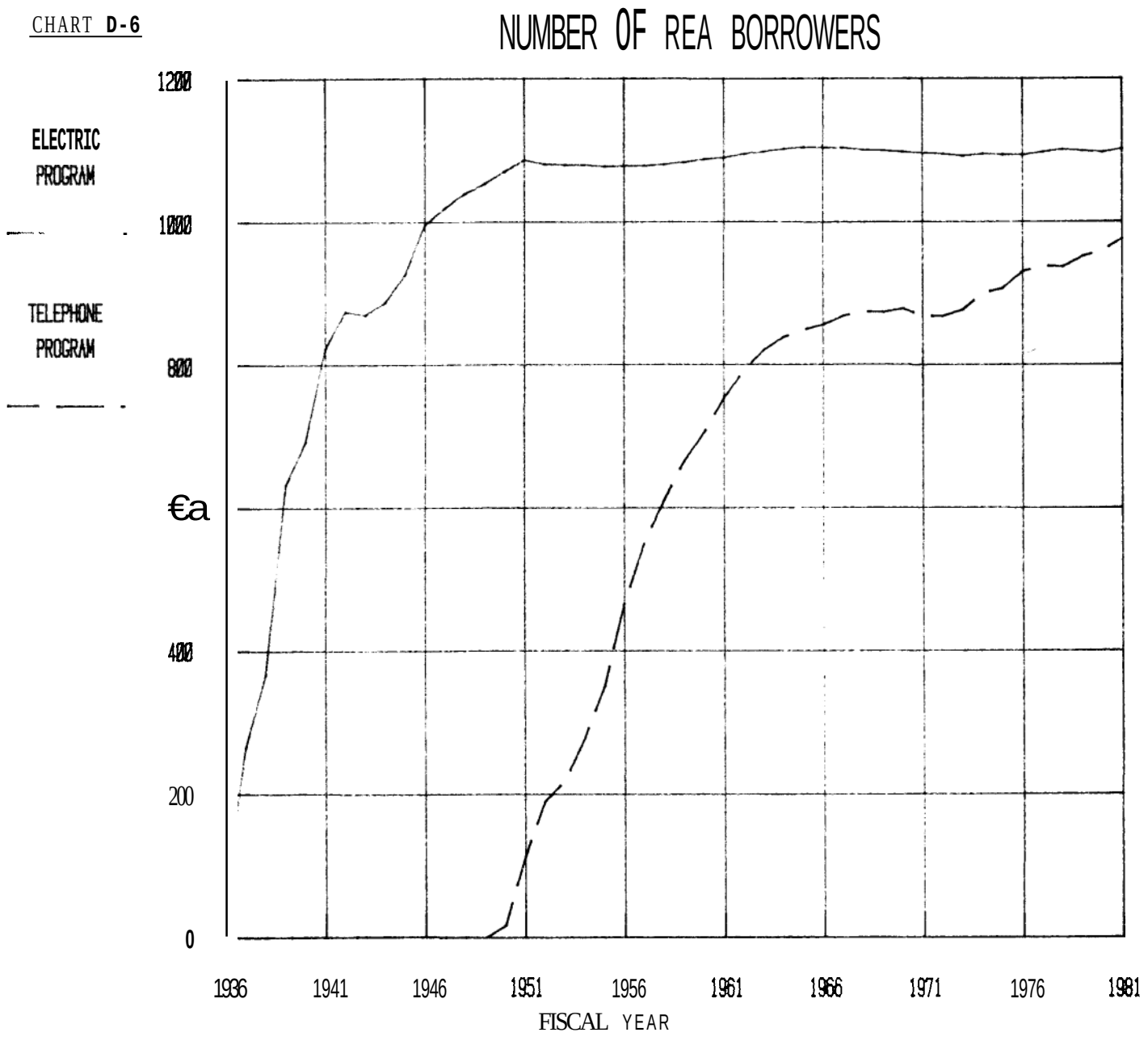


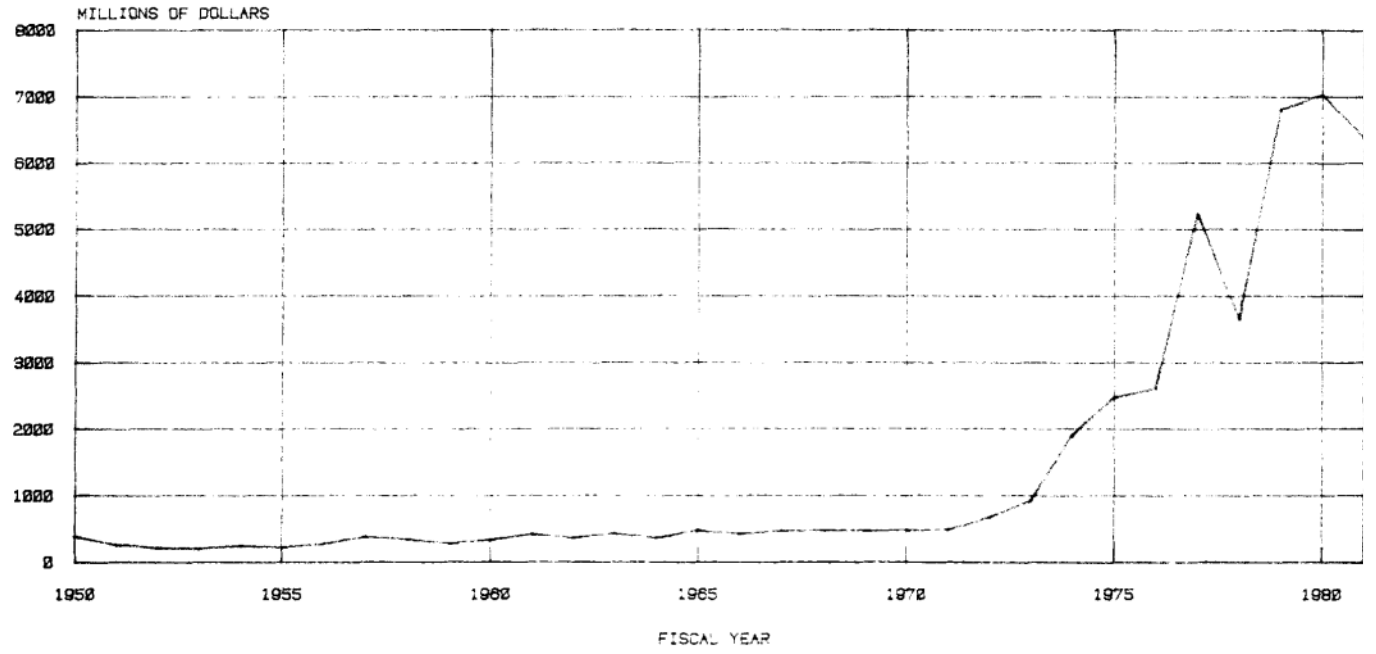
TABLE D-10

Number of REA Electric and Telephone Borrowers, Fiscal Years 1936-1981

| Fiscal Year | Electric Borrowers | Telephone Borrowers |
|---|---|---|
| 1936 | 66 | --- |
| 1937 | 266 | --- |
| 1938 | 367 | --- |
| 1939 | 632 | --- |
| 1940 | 692 | --- |
| 1941 | 823 | --- |
| 1942 | 874 | --- |
| 1943 | 869 | --- |
| 1944 | 887 | --- |
| 1945 | 926 | --- |
| 1946 | 996 | --- |
| 1947 | 1,019 | --- |
| 1948 | 1,039 | --- |
| 1949 | 1,053 | --- |
| 1950 | 1,070 | 17 |
| 1951 | 1,076 | 113 |
| 1952 | 1,080 | 190 |
| 1953 | 1,079 | 219 |
| 1954 | 1,079 | 279 |
| 1955 | 1,077 | 351 |
| 1956 | 1,078 | 466 |
| 1957 | 1,078 | 551 |
| 1958 | 1,080 | 611 |
| 1959 | 1,083 | 665 |
| 1960 | 1,087 | 705 |
| 1961 | 1,089 | 753 |
| 1962 | 1,094 | 790 |
| 1963 | 1,098 | 820 |
| 1964 | 1,102 | 838 |
| 1965 | 1,104 | 848 |
| 1966 | 1,103 | 855 |
| 1967 | 1,103 | 867 |
| 1968 | 1,100 | 874 |
| 1969 | 1,099 | 873 |
| 1970 | 1,097 | 878 |
| 1971 | 1,095 | 867 |
| 1972 | 1,094 | 867 |
| 1973 | 1,091 | 876 |
| 1974 | 1,094 | 900 |
| 1975 | 1,093 | 906 |
| 1976 | 1,093 | 930 |
| TQ | 1,093 | 934 |
| 1977 | 1,097 | 938 |
| 1978 | 1,101 | 936 |
| 1979 | 1,099 | 951 |
| 1980 | 1,097 | 960 |
| 1981 | 1,102 | 976 |

Although the total amount of financing provided or guaranteed by REA has increased greatly, as has the complexity of many of the electric generation and telephone projects, REA's staff has effectively handled the increased work load.

CHART D-7 LOANS, GUARANTEES AND STAFF YEARS
Loans and Guarantees Approved*




*Includes REA and RTB loans and REA loan guarantee commitments.

REA STAFF-YEARS

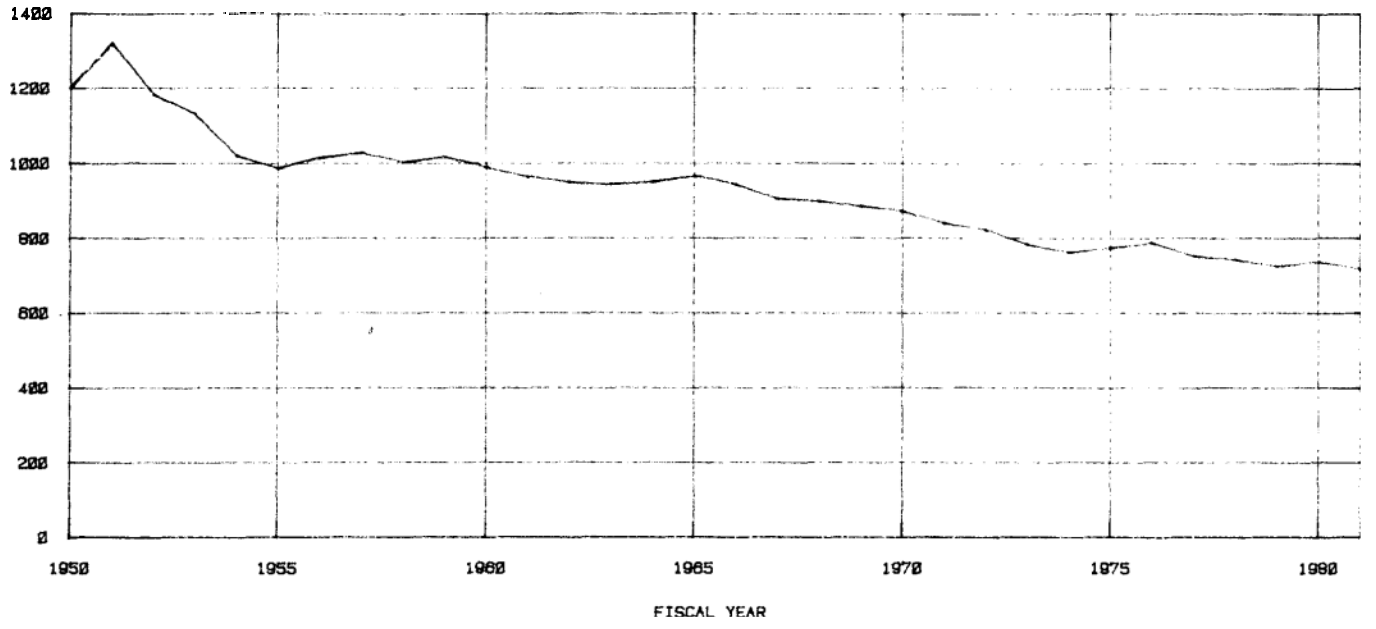


TABLE D-11

REA Staff Years vs. Loan Funds Approved, Fiscal Years 1936-1981

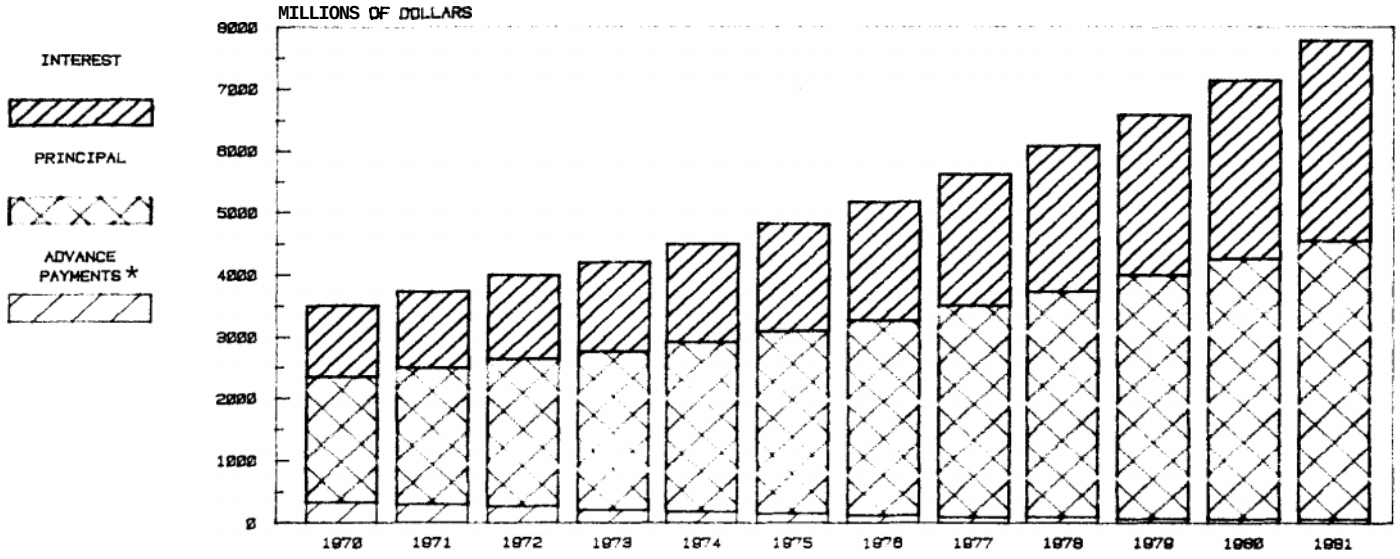
| Fiscal Year | Staff Years | Loan Funds Approved * |
|---|---|---|
| 1936 | 206 | $ 17,929 |
| 1937 | 391 | 50,347 |
| 1938 | 460 | 31,660 |
| 1939 | 684 | 141,899 |
| 1940 | 785 | 44,880 |
| 1941 | 950 | 101,710 |
| 1942 | 1,094 | 91,282 |
| 1943 | 790 | 8,225 |
| 1944 | 646 | 34,002 |
| 1945 | 723 | 26,343 |
| 1946 | 987 | 29C ,914 |
| 1947 | 1,117 | 256,389 |
| 1948 | 929 | 319,110 |
| 1949 | 1,076 | 449,318 |
| 1950 | 1,201 | 379,719 |
| 1951 | 1,321 | 259,993 |
| 1952 | 1,183 | 209,017 |
| 1953 | 1,131 | 206,946 |
| 1954 | 1,020 | 241,816 |
| 1955 | 987 | 220,274 |
| 1956 | 1,014 | 270,765 |
| 1957 | 1,029 | 382,191 |
| 1958 | 1,002 | 330,875 |
| 1959 | 1,018 | 276,215 |
| 1960 | 989 | 325,108 |
| 1961 | 964 | 416,902 |
| 1962 | 948 | 352,931 |
| 1963 | 943 | 427,279 |
| 1964 | 950 | 351,412 |
| 1965 | 966 | 476,947 |
| 1966 | 943 | 412,729 |
| 1967 | 904 | 470,984 |
| 1968 | 898 | 469,928 |
| 1969 | 884 | 469,825 |
| 1970 | 872 | 469,962 |
| 1971 | 839 | 486,817 |
| 1972 | 821 | 662,873 |
| 1973 | 782 | 912,931 |
| 1974 | 760 | 1,896,075 |
| 1975 | 773 | 2,466,470 |
| 1976 | 785 | 2,603,287 |
| TQ | 168 | 692,585 |
| 1977 | 751 | 5,229,061 |
| 1978 | 741 | 3,634,935 |
| 1979 | 724 | 6,810.338 |
| 1980 | 735 | 7,022,604 |
| 1981 | 718 | 6,391,064 |

* Includes REA electric and telephone loans, RTB loans and REA loan guarantee commitments.

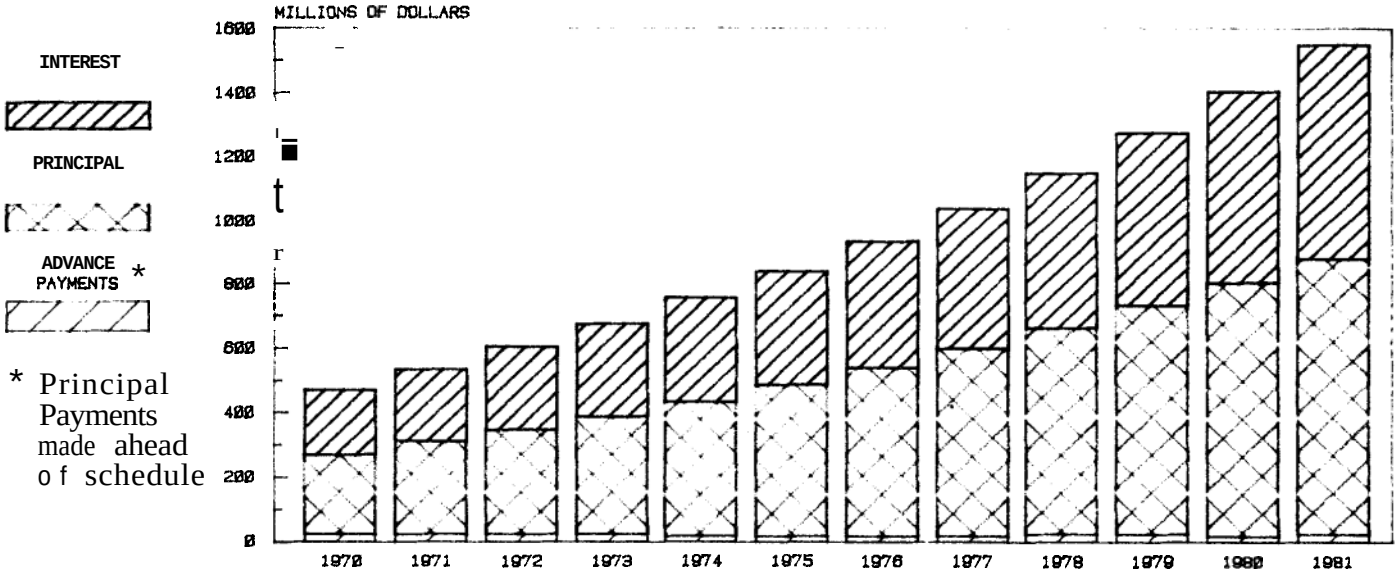
REA's record of principal and interest collections has been excellent. As of December 31, 1981, REA had collected more than $9.2 billion in principal and interest payments from its rural electric and telephone borrowers. Total losses to date have amounted to only $44,478.

CHART D-8 CUMULATIVE PAYMENTS OF PRINCIPAL AND INTEPEST ON REA LOANS

REA Electric Borrowers




REP, Telephone Borrowers




* Principal Payments made ahead of schedule

TABLE D-12

PAYMENTS OF PRINCIPAL AND INTEREST ON REA LOANS
CUMULATIVE TOTALS IN MILLIONS
(INCLUDES NOTES PAID IN FULL)

| | ELECTRIC | | | TELEPHONE | | |
|---|---|---|---|---|---|---|
| | Advance Payments* | Principal Due & Paid | Interest Due & Paid | Advance Payments* | Principal Due & Paid | Interest Due & Paid |
| 1970 | $325.0 | $2,014.5 | $1,158.5 | $24.6 | $244.5 | $200.7 |
| 1971 | 301.4 | 2,180.6 | 1,253.2 | 25.7 | 282.8 | 227.9 |
| 1972 | 280.2 | 2,354.9 | 1,353.6 | 25.3 | 322.4 | 256.7 |
| 1973 | 213.1 | 2,535.3 | 1,460.6 | 22.1 | 366.1 | 287.1 |
| 1974 | 171.0 | 2,727.1 | 1,587.8 | 19.9 | 415.0 | 320.0 |
| 1975 | 138.5 | 2,931.3 | 1,738.2 | 19.8 | 466.5 | 355.7 |
| 1976 | 115.3 | 3,147.4 | 1,910.0 | 19.6 | 520.4 | 395.1 |
| 1977 | 103.4 | 3,385.0 | 2,109.4 | 20.3 | 579.0 | 439.1 |
| 1978 | 89.8 | 3,639.1 | 2,335.0 | 21.7 | 641.1 | 486.9 |
| 1979 | 70.9 | 3,913.4 | 2,590.6 | 22.0 | 709.0 | 539.7 |
| 1980 | 64.2 | 4,200.6 | 2,876.9 | 20.7 | 781.0 | 599.1 |
| 1981 | 54.3 | 4,503.3 | 3,205.5 | 23.8 | 857.6 | 667.4 |

* Principal payments made ahead of schedule.

Each year since the Rural Electrification and Telephone Revolving Fund (RETRF) was established in 1973, REA has advanced more loan funds to its borrowers than it has received in payments on loans.

The RETRF obtains the additional funds necessary to meet advances and interest expenses from the U.S. Treasury, directly or through the Federal Financing Bank, at rates of interest greatly in excess of the interest rates charged borrowers.

CHART D-9

# RURAL ELEC. & TELE. REVOLVING FUND

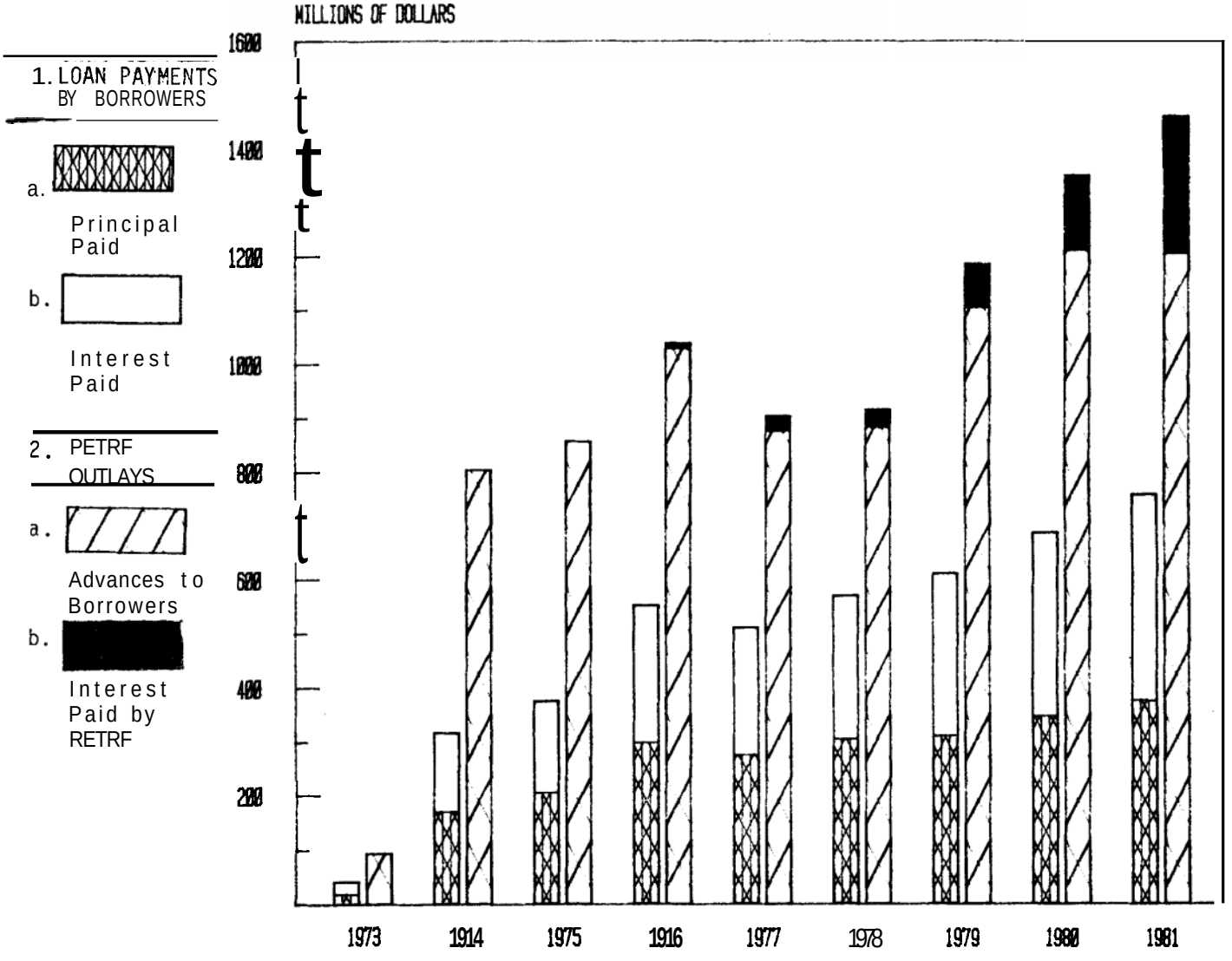


TABLE D-13 THE RURAL ELECTRIFICATION AND TELEPHONE REVOLVING FUND (RETRF)
(Dollars in Millions)

| FISCAL YEAR | LOAN PAYMENTS RECEIVED | | RETRF OUTLAYS | |
|---|---|---|---|---|
| | PRINCIPAL | INTEREST | ADVANCE TO BORROWERS | INTEREST PAID |
| 1973 | $ 20.3 | $ 21.4 | $ 92.4 | $ 0.0 |
| 1974 | 173.1 | 144.2 | 802.4 | 0.0 |
| 1975 | 204.0 | 174.3 | 854.9 | 0.0 |
| 1976 | 299.2 | 252.3 | 1027.9 | 9.7 |
| 1977 | 275.2 | 234.9 | 874.9 | 29.6 |
| 1978 | 303.1 | 268.1 | 881.4 | 36.9 |
| 1979 | 313.8 | 295.7 | 1105.2 | 79.1 |
| 1980 | 349.1 | 336.9 | 1206.8 | 144.2 |
| 1981 | 373.1 | 382.7 | 1203.8 | 258.8 |

When Congress created the REA loan program it did not provide an interest rate subsidy. Interest rates charged borrowers fluctuated with the cost of money to the Government. It was not until 1944 that Congress established a fixed interest rate of two percent, which at that time was the approximate cost of money to the Government. As time went by and interest rates rose, the subsidy associated with REA loans grew. During recent years there has been a significant widening of the gap between the cost of money to the Government and the interest rate charged borrowers on REA loans.

CHART D-10 INTEREST RATE ON REA LOANS vs. COST OF MONEY TO THE GOVERNMENT

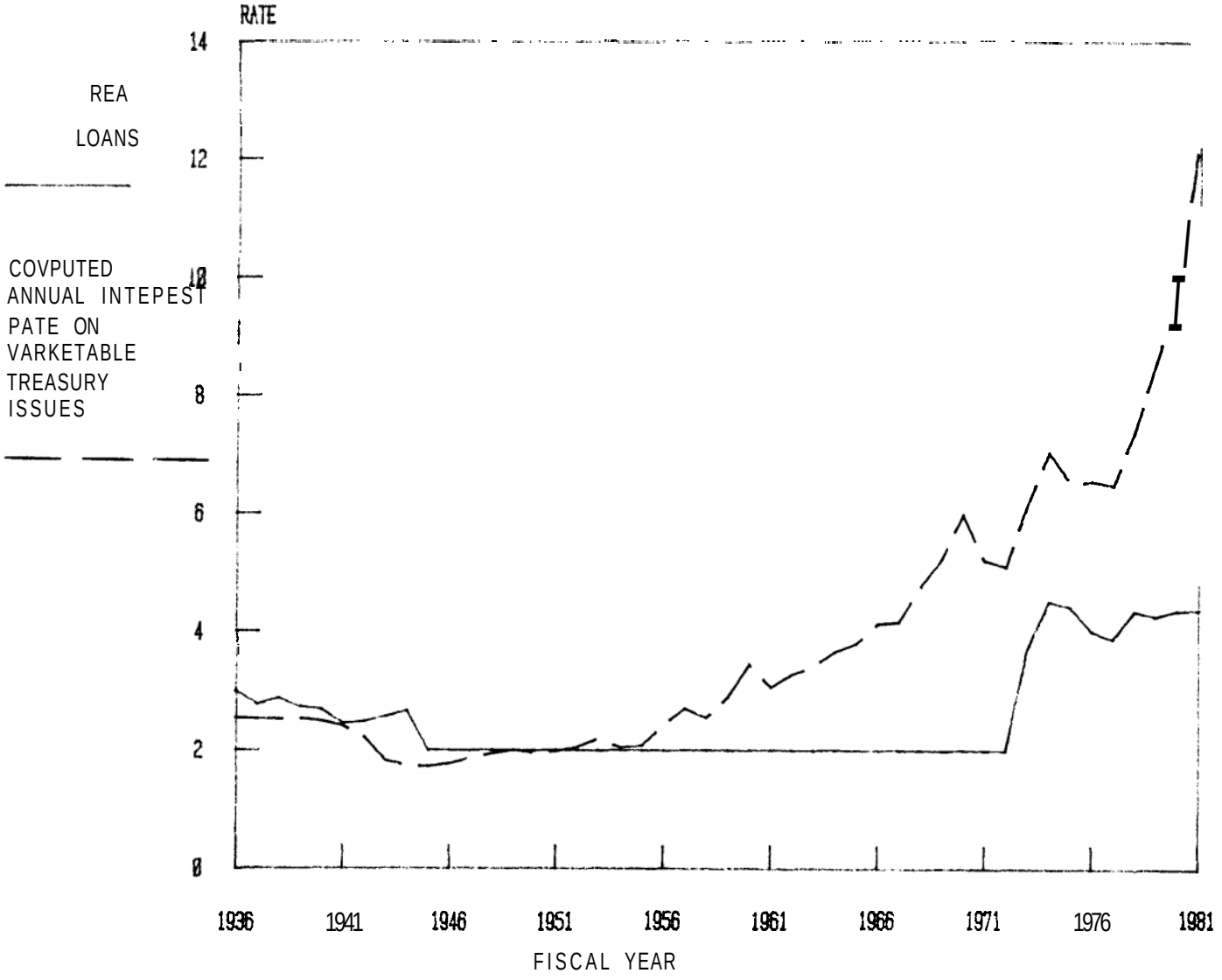


TABLE D-14

Interest Rate on REA Loans vs. Cost of Money to the Government

| Fiscal Year | Interest Rate Paid by Borrowers on REA Loans* | Computed Annual Interest Rate on Marketable Treasury Issues** |
|---|---|---|
| 1936 | 3.00 | 2.530 |
| 1937 | 2.77 | 2.525 |
| 1938 | 2.88 | 2.521 |
| 1939 | 2.73 | 2.525 |
| 1940 | 2.69 | 2.492 |
| 1941 | 2.46 | 2.413 |
| 1942 | 2.48 | 2.225 |
| 1943 | 2.57 | 1.822 |
| 1944 | 2.67 | 1.725 |
| 1945 | 2.00 | 1.718 |
| 1946 | 2.00 | 1.773 |
| 1947 | 2.00 | 1.871 |
| 1948 | 2.00 | 1.942 |
| 1949 | 2.00 | 2.001 |
| 1950 | 2.00 | 1.958 |
| 1951 | 2.00 | 1.981 |
| 1952 | 2.00 | 2.051 |
| 1953 | 2.00 | 2.207 |
| 1954 | 2.00 | 2.043 |
| 1955 | 2.00 | 2.079 |
| 1956 | 2.00 | 2.427 |
| 1957 | 2.00 | 2.707 |
| 1958 | 2.00 | 2.546 |
| 1959 | 2.00 | 2.891 |
| 1960 | 2.00 | 3.449 |
| 1961 | 2.00 | 3.063 |
| 1962 | 2.00 | 3.285 |
| 1963 | 2.00 | 3.425 |
| 1964 | 2.00 | 3.659 |
| 1965 | 2.00 | 3.800 |
| 1966 | 2.00 | 4.134 |
| 1967 | 2.00 | 4.165 |
| 1968 | 2.00 | 4.757 |
| 1969 | 2.00 | 5.232 |
| 1970 | 2.00 | 5.986 |
| 1971 | 2.00 | 5.210 |
| 1972 | 2.00 | 5.099 |
| 1973 | 3.72 | 6.129 |
| 1974 | 4.52 | 7.030 |
| 1975 | 4.42 | 6.533 |
| 1976 | 4.02 | 6.559 |
| 1977 | 3.88 | 6.481 |
| 1978 | 4.35 | 7.388 |
| 1979 | 4.27 | 8.592 |
| 1980 | 4.37 | 9.608 |
| 1981 | 4.38 | 12.435 |

* Weighted average interest rate on REA loans approved during the fiscal year.

** Source: Treasury Bulletin, U.S. Department of the Treasury.

Rural electric systems have historically had more rapid rates of increase in electric demand than the total electric utility industry. However, since 1973 growth in electric usage has declined for both REA borrowers and the total industry. Preliminary 1981 statistics show that the amount of electricity used by rural electric consumers grew by the lowest rate in the history of the program. Reduced load growth translates into reduced demand for loan funds to build new generating plants. This means savings for rural electric consumers.

CHART E-1 ANNUAL PERCENTAGE CHANGE IN ELECTRICITY USAGE

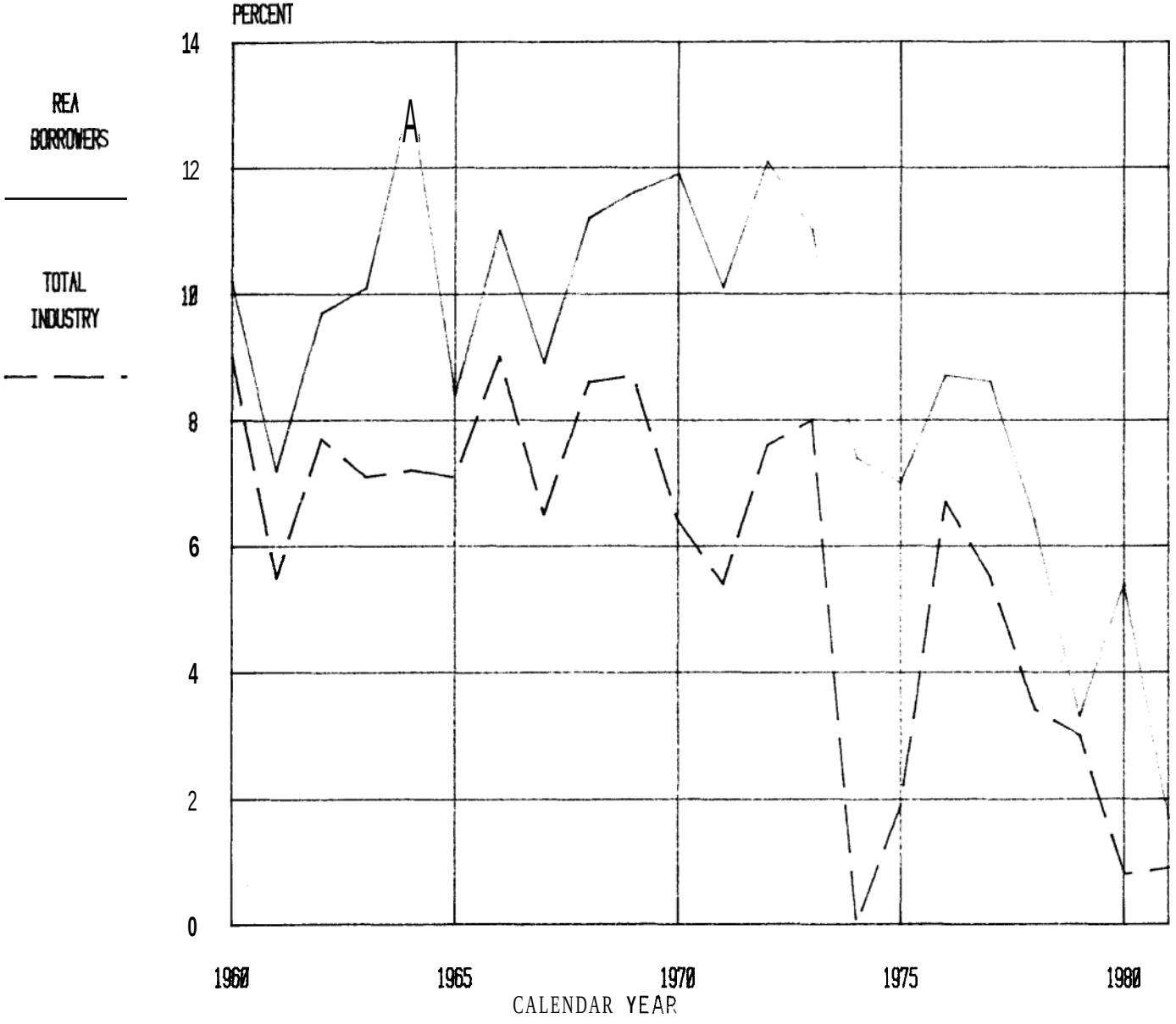


TABLE E-1

## Growth Trends in Electricity Usage

| Year | Annual Percent Change in kWh Sales to Ultimate Consumers | |
|---|---|---|
| | REA Borrowers | Total Electric Utility Industry |
| 1960 | 10.2% | 9.0% |
| 1961 | 7.2 | 5.5 |
| 1962 | 9.7 | 7.7 |
| 1963 | 10.1 | 7.1 |
| 1964 | 13.1 | 7.2 |
| 1965 | 8.4 | 7.1 |
| 1966 | 11.0 | 9.0 |
| 1967 | 8.9 | 6.5 |
| 1968 | 11.2 | 8.6 |
| 1969 | 11.6 | 8.7 |
| 1970 | 11.9 | 6.4 |
| 1971 | 10.1 | 5.4 |
| 1972 | 12.1 | 7.6 |
| 1973 | 11.0 | 8.0 |
| 1974 | 7.4 | 0.0 |
| 1975 | 7.0 | 1.9 |
| 1976 | 8.7 | 6.7 |
| 1977 | 8.6 | 5.5 |
| 1978 | 6.4 | 3.4 |
| 1979 | 3.3 | 3.0 |
| 1980 | 5.4 | 0.8 |
| 1981* | 1.7 | 0.9 |

* Preliminary

Sources: REA Bulletin 1-1; Edison Electric Institute Statistical Yearbook.

Consumers served by rural electric systems have been charged increasingly higher prices for electricity since the early 1970s. These price increases came after a long period of steadily declining prices.

However, it is interesting to note that when inflation is adjusted for, there has been very little real increase in electricity prices to rural electric consumers--electricity remains a very good buy. Rural electric consumers are paying far less for electricity today in constant dollars than they were in the early days of the rural electric program.

CHART E-2

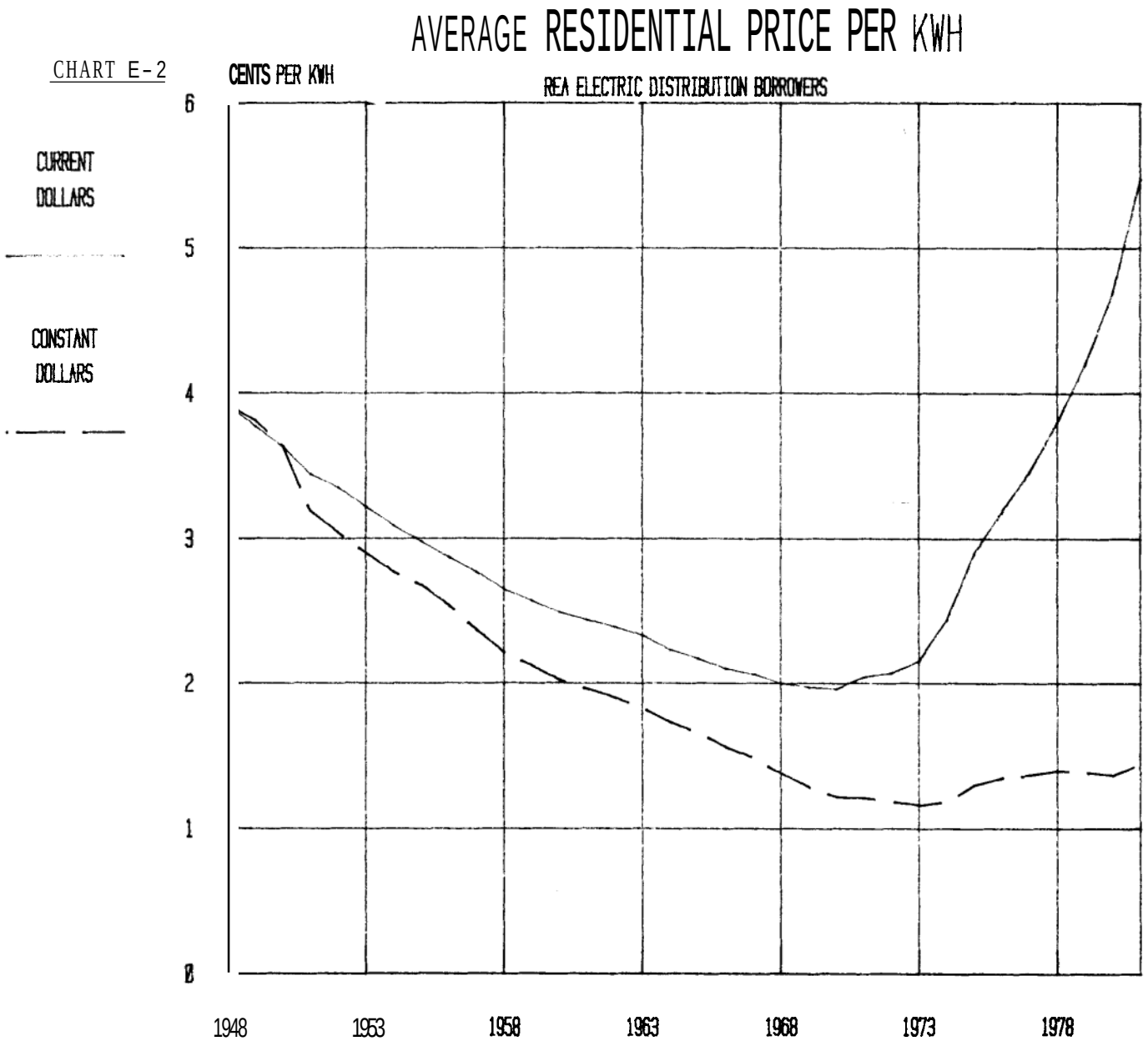


TABLE E-2

Average Residential Price Per kWh Charged by REA Electric Borrowers

| Year | Current[1/] | Constant[2/] |
|---|---|---|
| 1948 | 3.92¢ | 3.92¢ |
| 1949 | 3.77 | 3.81 |
| 1950 | 3.63 | 3.63 |
| 1951 | 3.44 | 3.19 |
| 1952 | 3.35 | 3.04 |
| 1953 | 3.22 | 2.90 |
| 1954 | 3.09 | 2.77 |
| 1955 | 2.98 | 2.68 |
| 1956 | 2.87 | 2.54 |
| 1957 | 2.77 | 2.37 |
| 1958 | 2.65 | 2.21 |
| 1959 | 2.57 | 2.12 |
| 1960 | 2.49 | 2.02 |
| 1961 | 2.44 | 1.96 |
| 1962 | 2.39 | 1.90 |
| 1963 | 2.33 | 1.83 |
| 1964 | 2.23 | 1.73 |
| 1965 | 2.17 | 1.66 |
| 1966 | 2.10 | 1.56 |
| 1967 | 2.06 | 1.49 |
| 1968 | 2.00 | 1.38 |
| 1969 | 1.97 | 1.29 |
| 1970 | 1.96 | 1.22 |
| 1971 | 2.04 | 1.21 |
| 1972 | 2.07 | 1.19 |
| 1973 | 2.15 | 1.16 |
| 1974 | 2.44 | 1.19 |
| 1975 | 2.90 | 1.30 |
| 1976 | 3.19 | 1.35 |
| 1977 | 3.46 | 1.37 |
| 1978 | 3.80 | 1.40 |
| 1979 | 4.20 | 1.39 |
| 1980 | 4.69 | 1.37 |
| 1981* | 5.48 | 1.45 |

* Preliminary.

1/ Current $ = dollars of the year.

2/ Constant $ = dollars adjusted for inflation. The Consumer Price Index was used to convert current dollars to constant dollars.

Electric rates charged rural electric consumers have increased mainly because of sharp escalations in the cost of power. In most cases, increases in the costs of distributing power have been more moderate. The cost of power has risen mainly because of: (a) increasing fuel costs and (b) expensive new generating units that are coming on line.

**CHART E-3** **AVERAGE POWER AND OTHER COSTS PER kWh SOLD**

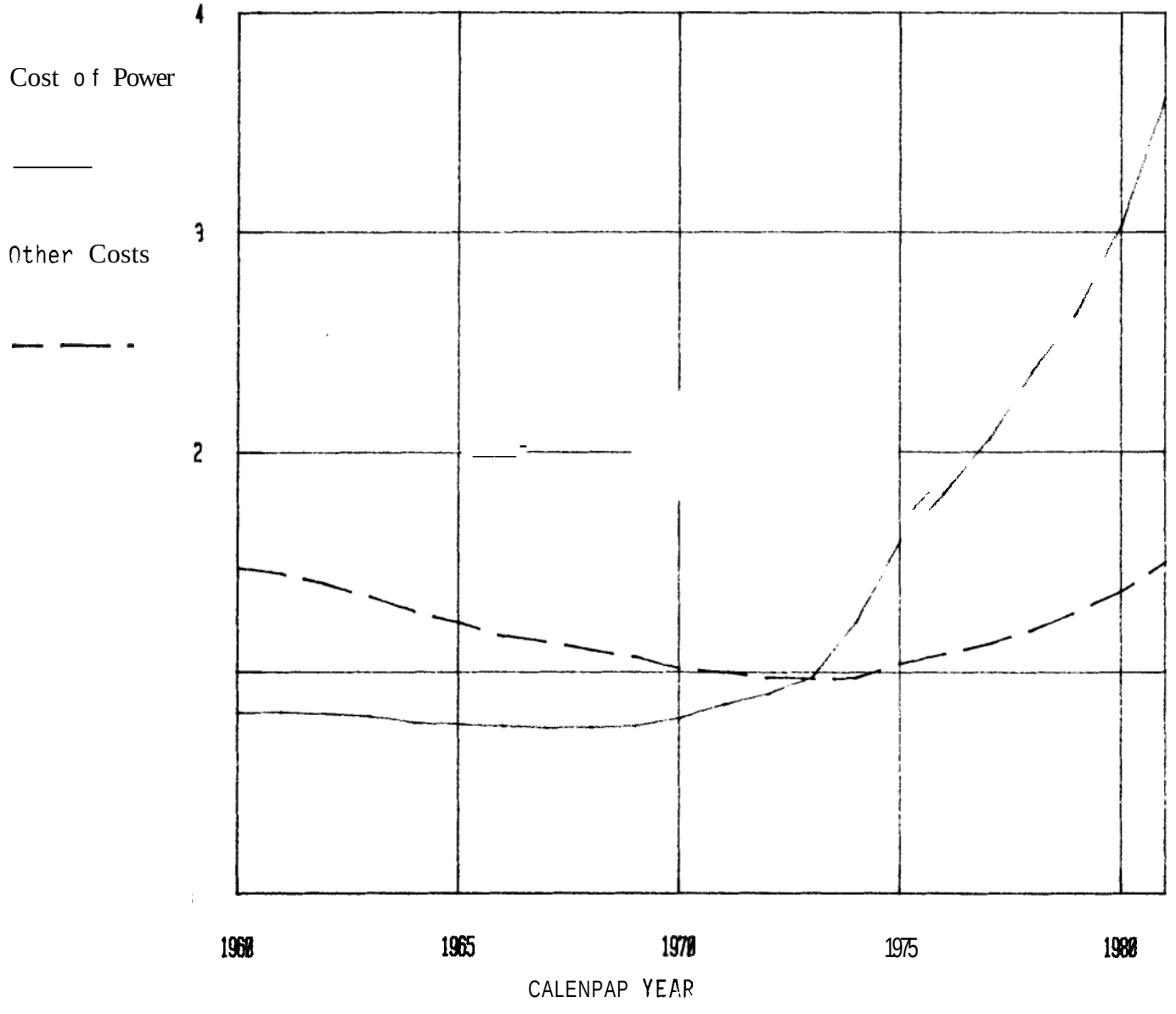


TABLE E-3 AVERAGE POWER AND OTHER COSTS PER kWh SOLD

| Year | cost of Power 1/ | Other Costs 2/ |
|---|---|---|
| 1960 | 0.8176 | 1.4726 |
| 1961 | 0.819 | 1.446 |
| 1962 | 0.811 | 1.400 |
| 1963 | 0.802 | 1.346 |
| 1964 | 0.773 | 1.276 |
| 1965 | 0.766 | 1.224 |
| 1966 | 0.757 | 1.165 |
| 1967 | 0.750 | 1.138 |
| 1968 | 0.752 | 1.100 |
| 1969 | 0.757 | 1.069 |
| 1970 | 0.793 | 1.014 |
| 1971 | 0.854 | 0.999 |
| 1972 | 0.902 | 0.976 |
| 1973 | 0.974 | 0.969 |
| 1974 | 1.225 | 0.974 |
| 1975 | 1.593 | 1.039 |
| 1976 | 1.813 | 1.082 |
| 1977 | 2.056 | 1.129 |
| 1978 | 2.364 | 1.192 |
| 1979 | 2.631 | 1.277 |
| 1980 | 3.031 | 1.369 |
| 1981* | 3.611 | 1.501 |

* Prel iminary

1/ Includes power production expenses, transmission expense and cost of purchased power.

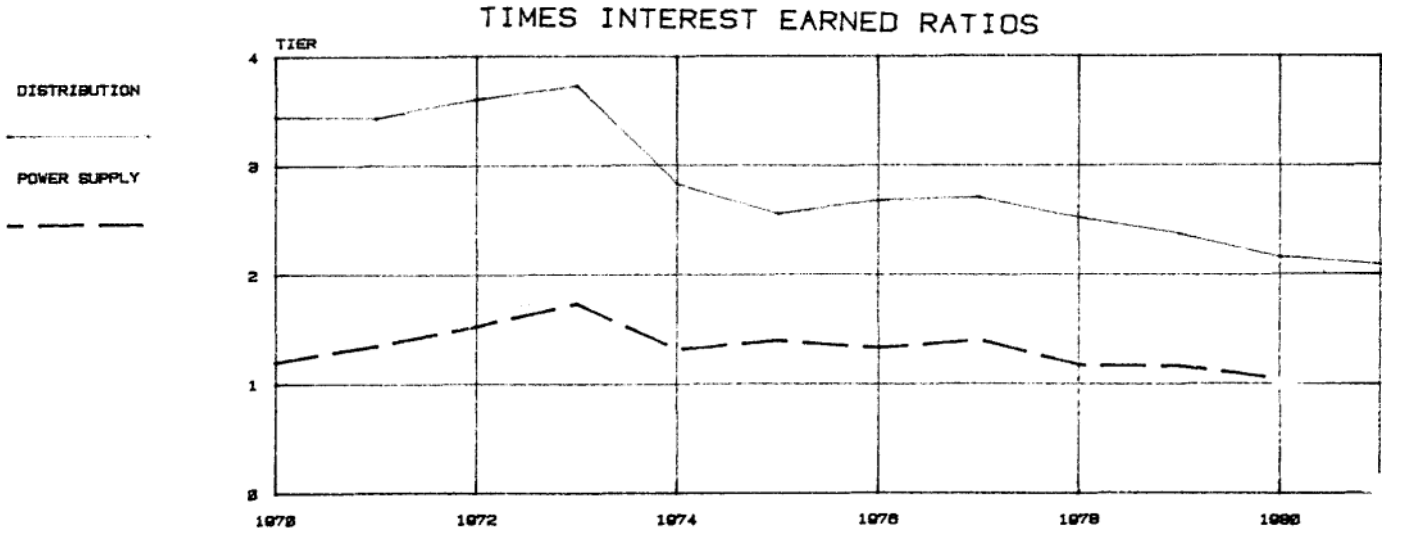
2/ Total revenue from sales of electric energy less cost of power.

Source: REA Bulletin 1-11

The financial ratios of REA electric borrowers have declined substantially since 1974 when costs began increasing rapidly and were not matched by similar rate increases.

Strong financial ratios are important because they affect the cost at which REA borrowers are able to obtain funds from private sources.

CHART E-4 FINANCIAL RATIOS OF REA ELECTRIC BORROWERS



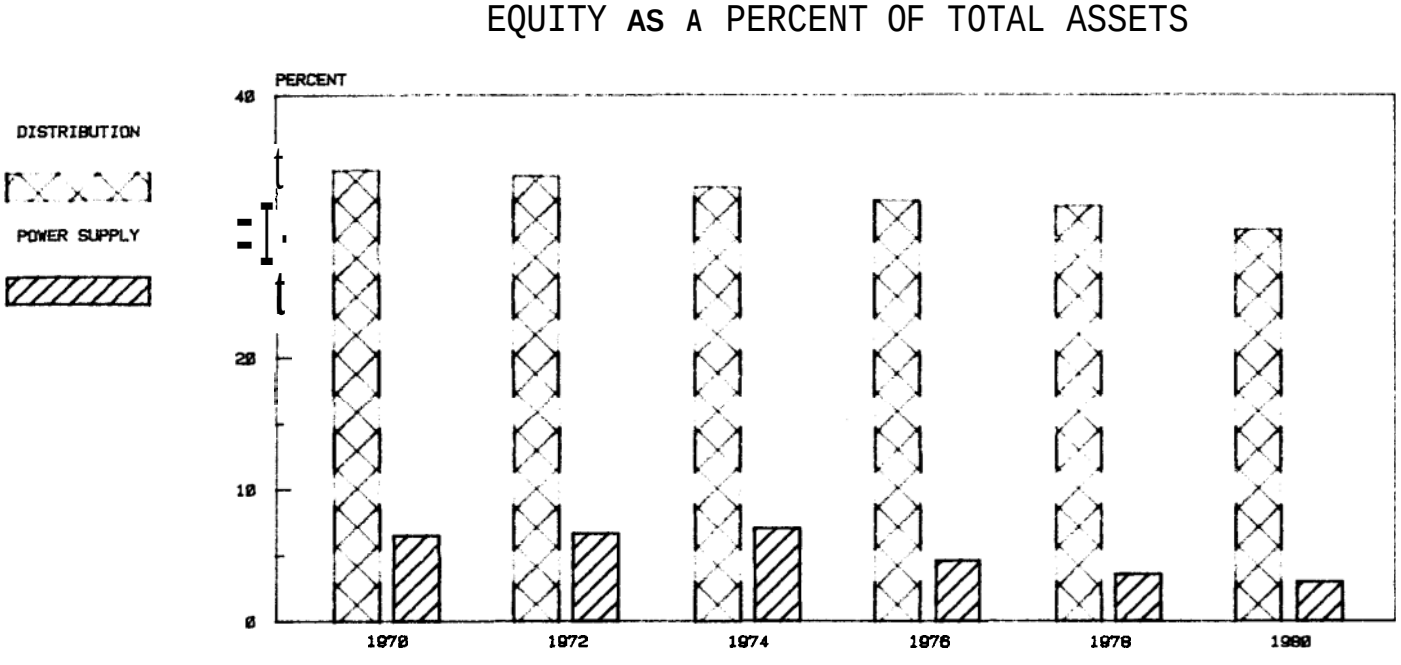



TABLE E-4

## FINANCIAL RATIOS OF REA ELECTRIC BORROWERS

| Year | Times Interest Earned Ratio (TIER) | | Equity as a Percent of Total Assets | |
|---|---|---|---|---|
| | Distribution Borrowers | Power Supply Borrowers | Distribution Borrowers | Power Supply Borrowers |
| 1970 | 3.45 | 1.20 | 34.3% | 6.4% |
| 1971 | 3.44 | 1.35 | 33.7 | 6.4 |
| 1972 | 3.61 | 1.53 | 33.9 | 6.6 |
| 1973 | 3.73 | 1.73 | 33.9 | 7.0 |
| 1974 | 2.83 | 1.32 | 33.0 | 7.0 |
| 1975 | 2.56 | 1.39 | 32.4 | 5.7 |
| 1976 | 2.68 | 1.33 | 32.0 | 4.5 |
| 1977 | 2.71 | 1.40 | 31.9 | 3.7 |
| 1978 | 2.52 | 1.17 | 31.5 | 3.5 |
| 1979 | 2.37 | 1.16 | 30.6 | 3.6 |
| 1980 | 2.16 | 1.04 | 29.8 | 3.0 |
| 1981* | 2.09 | ---- | 29.8 | --- |

* Preliminary

Most of the revenue collected by REA electric distribution borrowers is used to pay for wholesale power. This component of cost has increased rapidly, and margins as a percent of total revenue have declined.

Interest expense represents only a small percentage of the revenue of distribution borrowers.

CHART E-5

## DISPOSITION OF THE REVENUE DOLLAR

REA ELECTRIC DISTRIBUTION BORROWERS

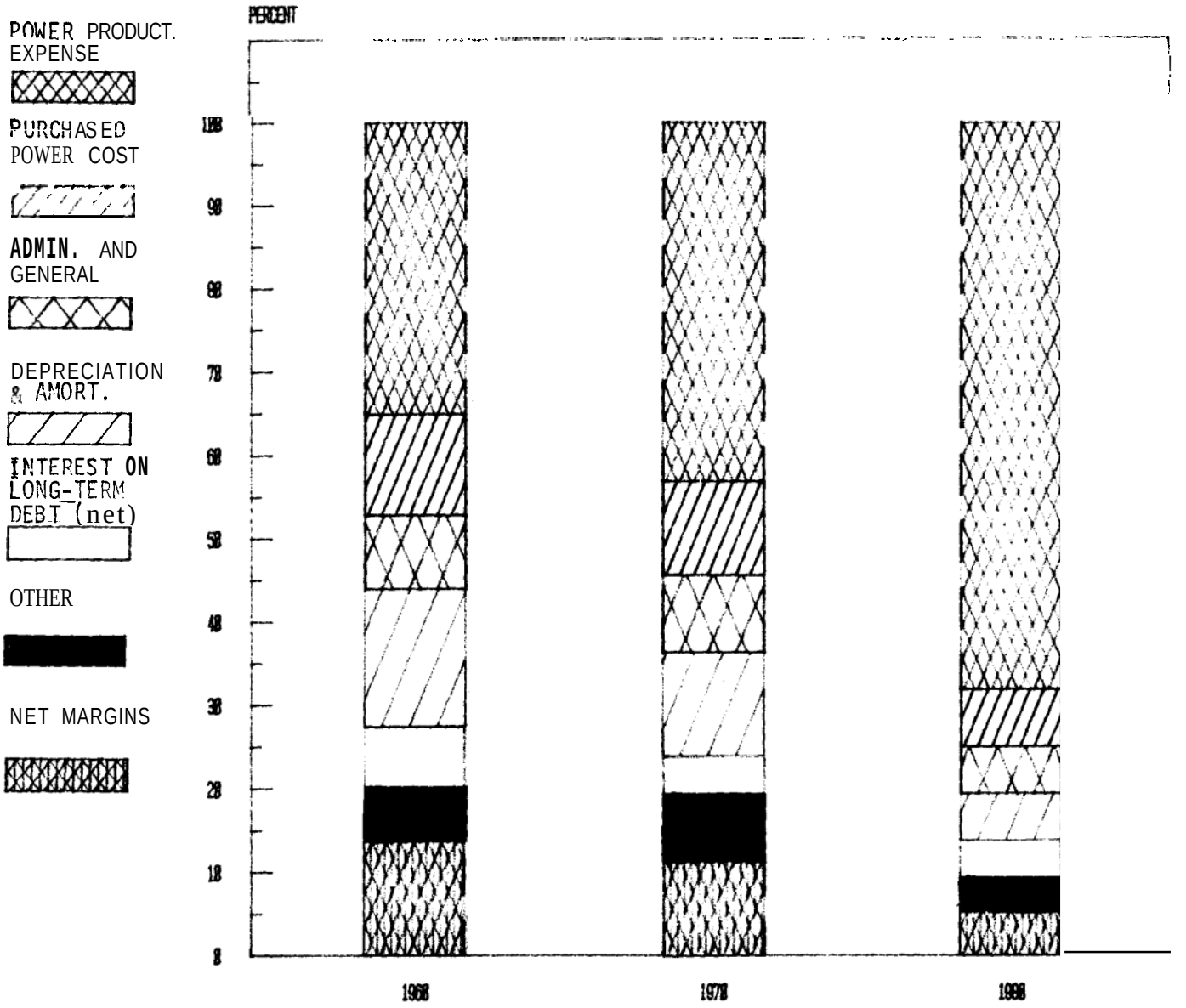


TABLE E-5

DISPOSITION OF THE REVENUE DOLLAR:
REA ELECTRIC DISTRIBUTION BORROWERS
(Dollars in Thousands)

| | 1960 | | 1970 | | 1980 | |
|---|---|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent | Dollars | Percent |
| Total Operating Revenue | 2594,702 | 100.0% | $1,252,166 | 100.0% | $6,529,782 | 100.0% |
| Cost of Power | 209,338 | 35.2 | 541,172 | 43.2 | 4,449,392 | 68.1 |
| Operation and Maintenance | 70,894 | 11.9 | 139,040 | 11.1 | 453,149 | 6.9 |
| Administrative and General | 53,903 | 9.1 | 115,037 | 9.2 | 362,969 | 5.6 |
| Depreciation and Amortization | 96,134 | 16.2 | 158,751 | 12.7 | 364,704 | 5.6 |
| Interest on Long-Term Debt (Net) | 43,279 | 7.3 | 56,906 | 4.5 | 295,524 | 4.5 |
| Other | 40,108 | 6.7 | 101,399 | 8.1 | 248,746 | 3.9 |
| Net Margins | 81,046 | 13.6 | 139,861 | 11.2 | 355,298 | 5.4 |

Most of the revenue collected by REA power supply borrowers is used for power production and to purchase wholesale power from other utilities. Increases in power production expense are mainly due to increases in the cost of fuel.

CHART E-6

# DISPOSITION OF THE REVENUE DOLLAR

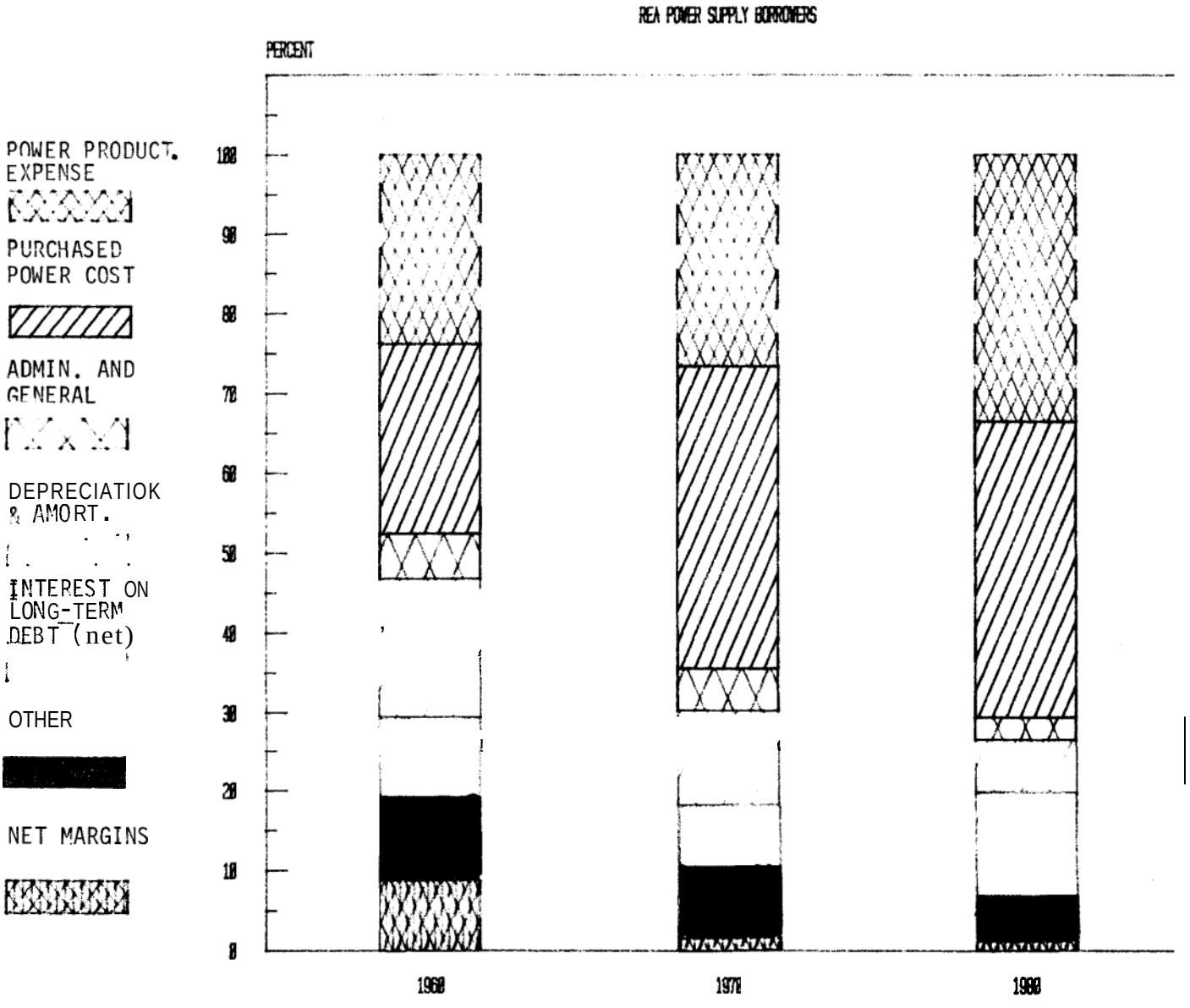


TABLE E-6

## DISPOSITION OF THE REVENUE DOLLAR: REA POWER SUPPLY BORROWERS
(Dollars in Thousands)

| | 1960 | | 1970 | | 1980 | |
|---|---|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent | Dollars | Percent |
| Total Operating Revenue | $69,089 | 100.0% | $282,949 | 100.0% | $3,177,001 | 100.0% |
| Power Production Expense | 16,351 | 23.7 | 75,626 | 26.7 | 1,062,096 | 33.4 |
| Cost of Purchased Power | 16,390 | 23.7 | 107,353 | 37.9 | 1,175,428 | 37.0 |
| Administrative and General | 4,094 | 5.9 | 14,390 | 5.1 | 96,210 | 3.0 |
| Depreciation and Amortization | 11,871 | 17.2 | 34,280 | 12.1 | 223,829 | 7.0 |
| Interest on Long-Term Debt (Net) | 6,940 | 10.0 | 21,202 | 7.5 | 411,407 | 12.9 |
| Other | 7,276 | 10.6 | 25,768 | 9.2 | 166,352 | 5.4 |
| Net Margins | 6,167 | 8.9 | 4,330 | 1.5 | 41,679 | 1.3 |

ELECTRIC PROGRAM

Most of the power distributed by rural electric systems is purchased from investor-owned utilities (IOUs) and publicly owned utilities. However, there has been a long-term trend toward REA borrowers generating more of their consumers' power needs.

CHART E-7

# SOURCES OF WHOLESALE POWER

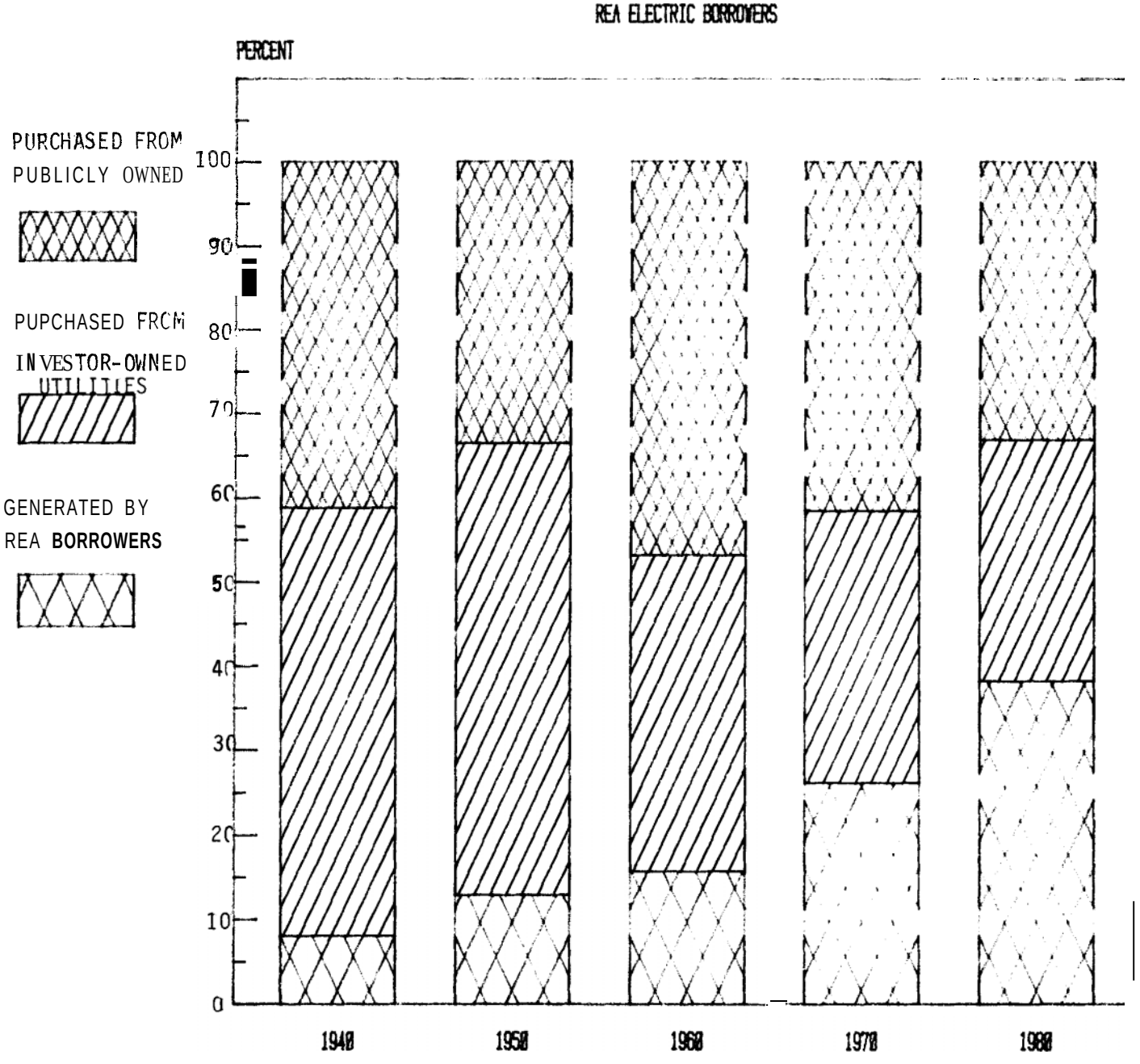


TABLE E-7 Sources of Wholesale, Power for REA Electric Borrowers

| Year | Generated by REA Borrowers | | Purchased from Investor-owned Utilities | | Purchased from Investor-owned Utilities | |
|---|---|---|---|---|---|---|
| | mWh | Pertent | mWh | Percent | mWh | Percent |
| 1940 | 34,314 | 8.1 | 215,973 | 51.0 | 173,354 | 40.9 |
| 1950 | 972,497 | 12.8 | 4,077,706 | 53.6 | 2,554,889 | 33.6 |
| 1960 | 4,568,786 | 15.6 | 11,060,332 | 37.8 | 13,636,987 | 46.6 |
| 1970 | 20,637,751 | 26.3 | 25,375,456 | 32.3 | 32,524,169 | 41.4 |
| 1980 | 69,536,829 | 38.2 | 52,614,204 | 28.9 | 59,864,121 | 32.9 |

SOURCE: REA **Bulletin** 111-2

The main trends regarding the type of plant that rural telephone systems are building to serve their subscribers are: (a) buried cable is quickly replacing aerial plant and (b) central office equipment is increasing as a percentage of the total.

CHART E-8 TYPE OF PLANT IN SERVICE

REA TELEPHONE BORROWEPS

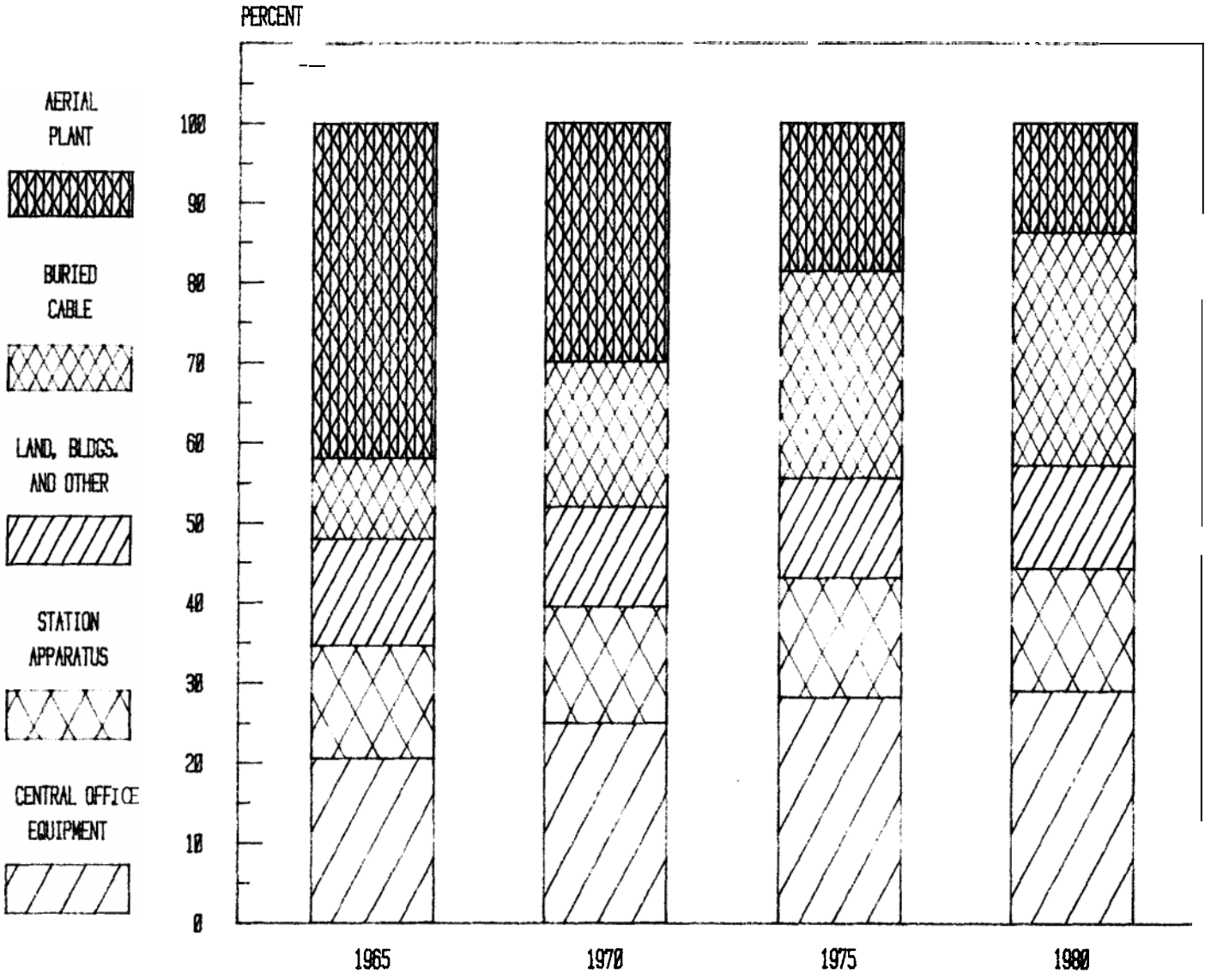


TABLE E-8

TYPE OF PLANT IN SERVICE
REA TELEPHONE BORROWERS
(Dollars in Thousands)

| | 1965 | | 1970 | |
|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent |
| Aerial Plant | $460,431 | 42.1% | $560,411 | 29.7% |
| Buried Cable | 109,955 | 10.0 | 346,736 | 18.4 |
| Land, Buildings and Other | 142,166 | 13.0 | 235,553 | 12.4 |
| Station Apparatus | 156,189 | 14.3 | 274,595 | 14.6 |
| Central Office Equipment | 225,894 | 20.6 | 469,395 | 24.9 |
| Total | $1,094,635 | 100.0% | $1,886,690 | 100.0% |

| | 1975 | | 1980 | |
|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent |
| Aerial Plant | $646,195 | 18.5% | $ 942,358 | 13.7% |
| Buried Cable | 910,440 | 26.0 | 1,990,426 | 29.0 |
| Land, Buildings and Other | 426,826 | 12.2 | 900,231 | 13.1 |
| Station Apparatus | 520,577 | 14.9 | 1,035,624 | 15.1 |
| Central Office Equipment | 992,808 | 28.4 | 2,001,295 | 29.1 |
| Total | $3,496,846 | 100.0% | $6,869,934 | 100.0% |

An increasing percentage of the revenue collected by REA telephone borrowers has been obtained from toll revenues. Local service revenues have decreased in relative importance.

CHART E-9

# SOURCE OF REVENUES

REA TELEPHONE BORROWERS

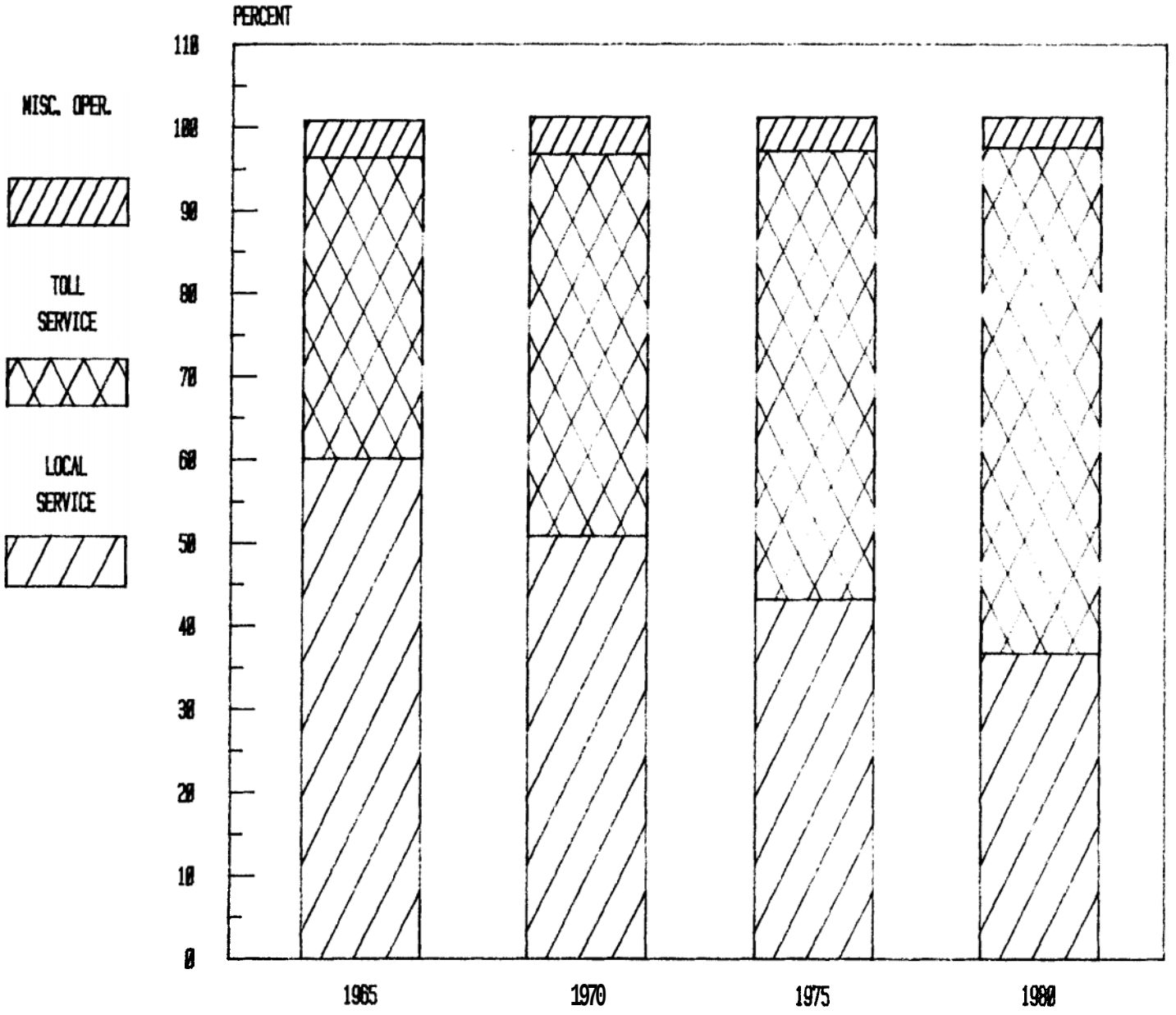


TABLE E-9 SOURCES OF REVENUES, REA TELEPHONE BORROWERS

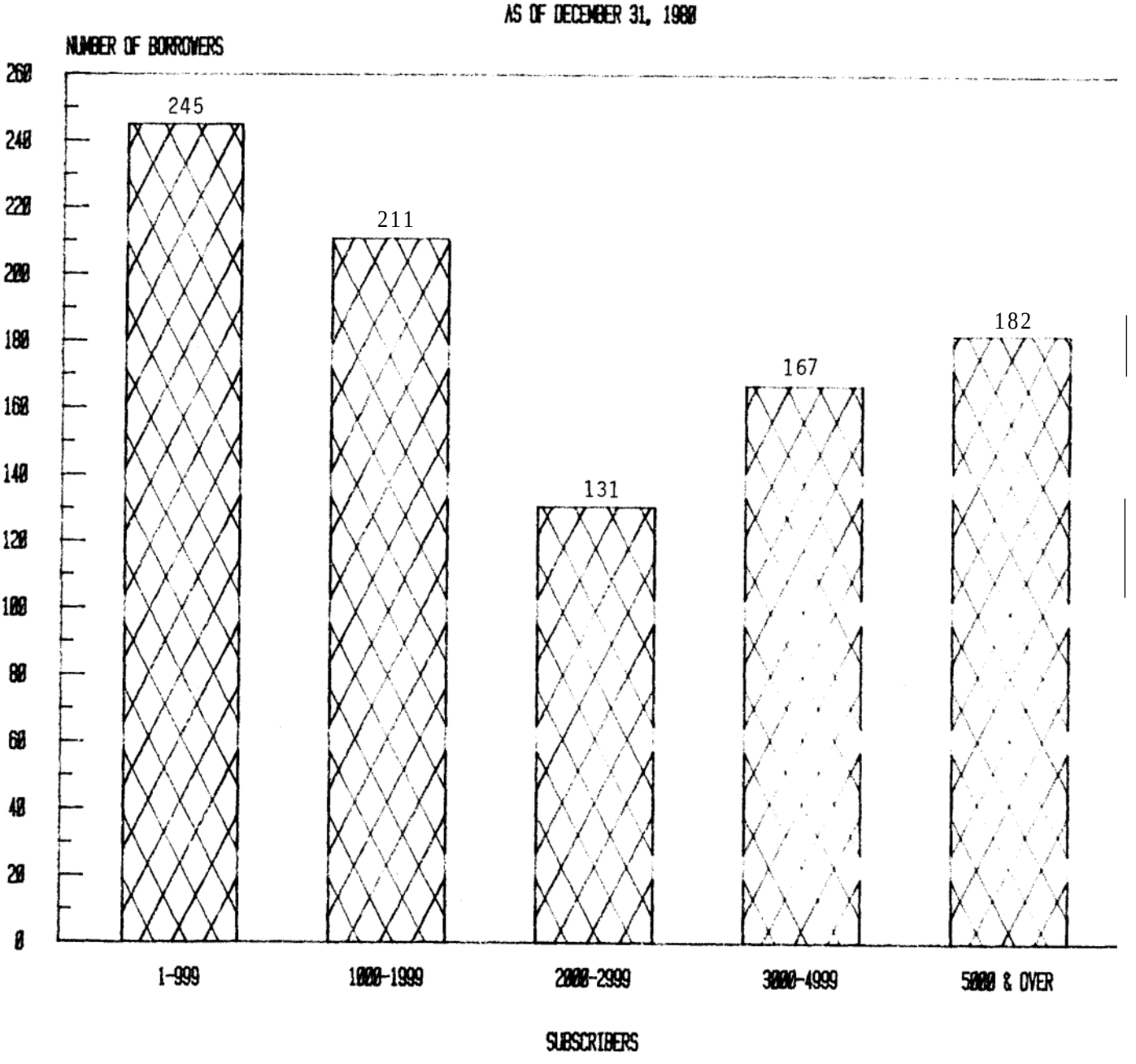
(Dollars in Thousands)

| | 1965 | | 1970 | |
|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent |
| Local Service Revenues | $112,791 | 60.3% | $184,485 | 50.9% |
| Net Toll Revenues | 67,687 | 36.2 | 165,848 | 45.7 |
| Misc. Operating Revenues | 7,569 | 4.0 | 14,931 | 4.1 |
| Uncollectible Operating Revenues | 1,056 | 0.5 | 2,570 | 0.7 |
| Total Operating Revenues | $186,991 | 100.0% | $362,694 | 100.0% |

| | 1975 | | 1980 | |
|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent |
| Local Service Revenues | $325,894 | 43.3% | $ 648,608 | 36.9% |
| Net Toll Revenues | 406,649 | 54.0 | 1,066,488 | 60.7 |
| Misc. Operating Revenues | 25,928 | 3.4 | 54,980 | 3.1 |
| Uncollectible Operating Revenues | 5,371 | 0.7 | 12,336 | 0.7 |
| Total Operating Revenues | $753,100 | 100.0% | $1,757,740 | 100.0% |

Most REA telephone borrowers are quite small businesses, in terms of the number of subscribers they serve. As of December 31, 1980, the average REA telephone borrower served 4,554 subscribers with an average of 5.3 subscribers per route mile.

CHART E-10 SUBSCRIBERS SERVEP PER REA TELEPHONE BORROWER



Selected operating ratios of borrowers for 1980 and the four prior years are presented below. The ratios of total operating revenues and net operating income or margin to average plant in service show an increase from 23.8 to 27.0 and from 5.2 to 5.9 respectively, in a comparison of 1976 with 1980. The ratios of maintenance and depreciation expenses have also shown increases in this period. The operating ratio in this five-year period has increased slightly from 88.3 in 1976 to 89.1 in 1980.

Table E-10 Operating Ratios of REA Telephone Borrowers

| | 1976 | 1977 | 1978 | 1979 | 1980 |
|---|---|---|---|---|---|
| Dollars per subscriber: | | | | | |
| Investment (total telephone plant) | $1,332.15 | $1,405.32 | $1,488.23 | $1,610.16 | $1,733.35 |
| Plant in service | 1,234.48 | 1,307.75 | 1,388.59 | 1,493.92 | 1,611.77 |
| Depreciated plant in service | 943.51 | 991.0% | 1,046.11 | 1,121.02 | 1,205.89 |
| Total assets | 1,182.01 | 1,238.21 | 1,308.44 | 1,418.39 | 1,525.88 |
| Percent of average plant in service: | | | | | |
| Total operating revenues | 23.8 | 24.3 | 25.6 | 26.7 | 27.0 |
| Operating expenses and taxes | 13.4 | 13.9 | 14.8 | 15.4 | 15.6 |
| Maintenance expenses | 4.4 | 4.7 | 5.0 | 5.4 | 5.5 |
| Depreciation expenses | 5.0 | 5.0 | 5.1 | 5.3 | 5.4 |
| Net operating income or margin | 5.2 | 5.2 | 5.5 | 6.0 | 5.9 |
| Percent of total operating revenues: | | | | | |
| Total operating deductions and fixed charges (operating ratio) | 88.3 | 88.6 | 88.4 | 88.1 | 89.1 |
| Other income and deductions (net) | 0.8 | 0.7 | 0.7 | 1.0 | 1.4 |
| Net income or margin | 12.5 | 12.1 | 12.3 | 13.0 | 12.3 |

The major expenses of rural telephone borrowers have been relatively stable as a percent of their total revenue: there have been no dramatic trends among any of the major expense items.

Interest on long-term debt, like other items has been stable--accounting for about ten percent of telephone borrower revenue for the past twenty years.

CHART E-1

## DISPOSITION OF THE REVENUE DOLLAR

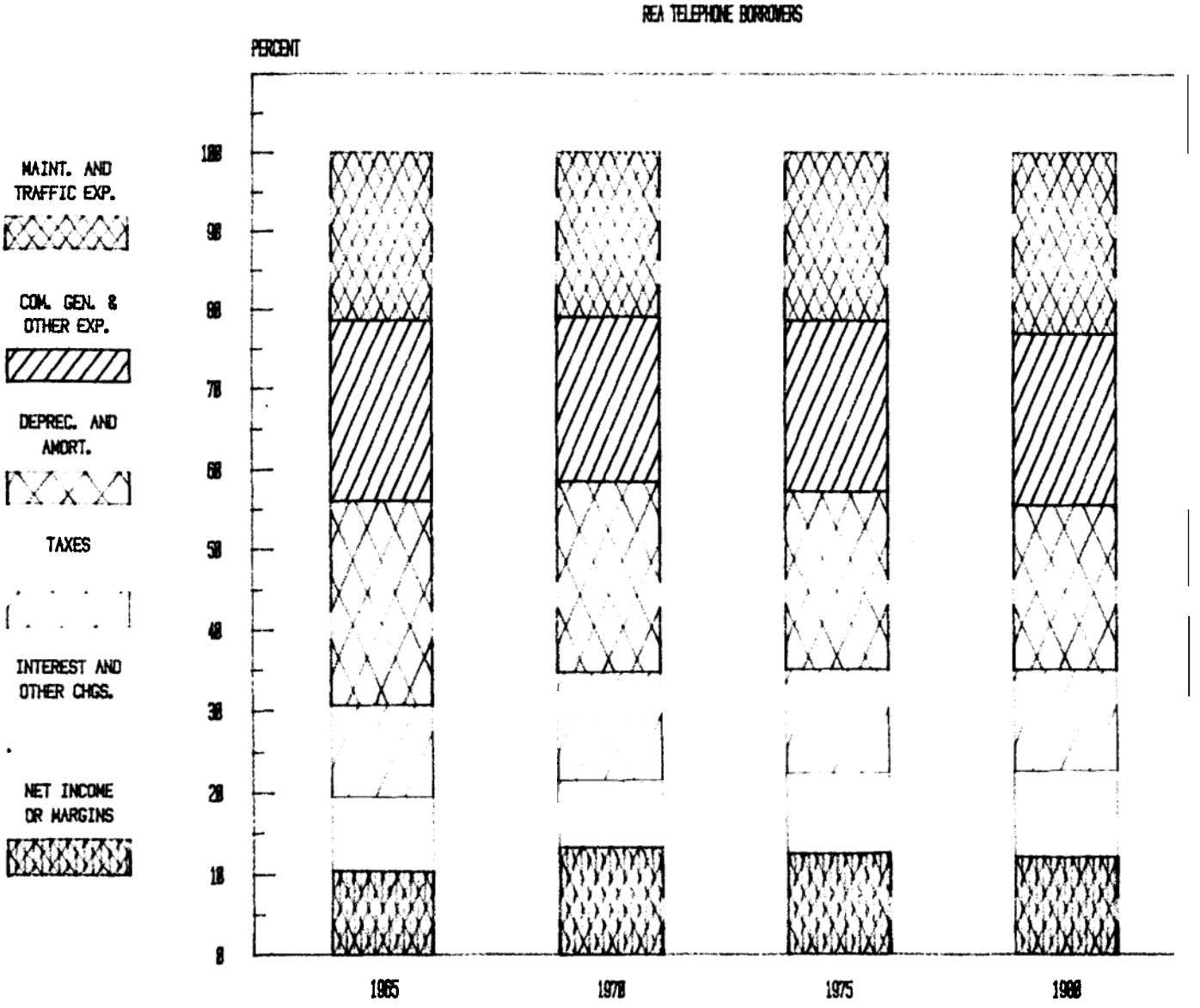


TABLE E-11

## DISPOSITION OF THE REVENUE DOLLAR: REA TELEPHONE BORROWERS
(Dollars in Thousands)

| | 1965 | | 1970 | | 1975 | | 1980 | |
|---|---|---|---|---|---|---|---|---|
| | Dollars | Percent | Dollars | Percent | Dollars | Percent | Dollars | Percent |
| Total Operating Revenue | $186,991 | 100.0% | $362,694 | 100.0% | $753,100 | 100.0% | $1,757,740 | 100.0% |
| Maintenance and Traffic Expense | 40,216 | 21.5 | 75,823 | 20.9 | 162,190 | 21.5 | 405,560 | 23.1 |
| Commercial, General and Other | 42,616 | 22.a | 75,667 | 20.9 | 162,765 | 21.6 | 387,127 | 22.0 |
| Depreciation and Amortization | 47,776 | 25.5 | 86,348 | 23.8 | 166,709 | 22.1 | 361,059 | 20.5 |
| Taxes | 20,839 | 11.1 | 49,427 | 13.6 | 97,440 | 12.9 | 222,568 | 12.7 |
| Interest on Long-term Debt | 17,121 | 9.2 | 29,261 | 8.0 | 73,930 | 9.8 | 174,805 | 10.0 |
| Other Fixed Charges (Net) | (5) | (0.0) | (370) | (0.1) | (152) | (0.0) | 14,660 | 0.8 |
| Other Income and Deductions (Net) | (1,274) | (0.6) | (2,742) | (0.7) | (5,238) | (0.6) | (24,395) | (1.4) |
| Net Income or Margin | 19,702 | 10.5 | 49,280 | 13.6 | 95,456 | 12.7 | 216,356 | 12.3 |

## LIST OF CHARTS AND TABLES

## LIST OF CHARTS AND TABLES



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